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THE DEPARTMENT OF EDUCATION IN AMERICAN UNIVERSITIES[1]

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I have been invited to discuss further the subject which you had under consideration last year, namely, the problem of turning Doctors of Philosophy into efficient teachers. There are some of you, I see by the printed reports of your earlier meeting, who regard the ability to teach as a natural gift. There are apparently many of you who are persuaded that courses in pedagogy cannot contribute materially to the improvement of a graduate of a university. In the face of such settled views, backed up by the success that many of you have attained in the teaching profession, it seems to be a bold and from some points of view a useless undertaking to come before you as I must with the assertion that ability to teach is not a natural gift and that every Doctor of Philosophy would be improved by a careful consideration in a scientific and historical way of the problems of education. I should be quite unwilling to come before you if the motive for my coming were merely to persuade you individu-

[1] An address delivered at the Association of Doctors of Philosophy of the University of Chicago, at their annual meeting, June 14, 1909. It was the climax of a series of articles and addresses published last year in the *University of Chicago Magazine*, in relation to a widely circulated *questionnaire* on "The Relations of the Doctorate to the Teaching Profession." A limited number of reprints of these articles may be had by addressing Professor H. E. Slaught, secretary of the Doctors' Association, The University of Chicago.—EDR. of the *School Review*.

ally of the importance of something that you have decided to neglect. I am here rather because you represent a certain academic opinion which is now in process of formation, or rather reformation, and which it is worth while for all of us to discuss in an impersonal way.

Until very recently university and college organizations have been based on the opinion expressed by some of you that teaching cannot be made a subject of special study and instruction. Gradually, however, a change is being worked out before our eyes. In spite of opposition and indifference, courses in education are being organized even in the most conservative institutions. Say what you will, these courses are here to stay and it is merely a matter of adjusting the relations between these courses and the rest of the work of the institution.

Before this change began, a very remarkable situation existed, in the fact that the lower schools were provided with teachers specially prepared in normal schools for their professional work, while high schools and colleges not only held to the view that teachers are born rather than trained, but even ignored and ostracized the normal schools. Thus the normal school was the only institution in this country which gave itself seriously to the task of preparing teachers and it was, and is even now, to a great extent, an institution which lies outside of our conventional educational scheme. Graduates of our high schools are recognized as prepared to enter college. If they go into college, they very frequently come back into the high schools as teachers. They are also prepared to enter the normal schools, but it is a curious fact that when they pass from the high school into the normal school they take a step which usually makes it impossible for them to return to the general educational succession of higher institutions either as students or as teachers.

All this is changing, not merely because the normal schools are improving, but chiefly because colleges and universities are seeing with more than their former insight that teachers of every grade need special preparation. Yet while institutions move, men linger. Men in physics and chemistry and mathematics and the classics have had very little interest in the department of

education. Some nobly tolerate it as a practical administrative institution related to the inspection of high schools or to affiliation of the university with the state teachers' association. As a university department, however, Education has very seldom been adopted with any degree of hospitality into the regular group of university departments.

My problem, as I see it, is to set forth the reasons, although some of you are in doubt and some are dogmatically opposed to my view, why you must recognize the universities which have established departments of education as rationally progressive. I shall not hesitate to use arguments which have direct personal application in order to enforce my conclusion.

The first fact which I wish to point out is that there is a great deal of poor teaching within our universities and colleges, and this fact can be traced to a neglect upon the part of academic men and women of the form in which they arrange their material. The investigator who has come upon some important fact in physics is very likely to be satisfied with the importance of that fact to the scientific world, and he pays little attention to the style in which he expresses that fact. One needs only to refer to the papers in any one of the technical journals to recognize that American men of science write for the most part an atrocious English style which would not be tolerated in any other calling. As a result the material which they present appeals to a very limited constituency made up of their own immediate colleagues who are so much interested in the matter which is presented that the form is entirely neglected.

This is not a failing of American students of science merely; it is a charge which can be legitimately brought against the writing of most of the German scientists. England has set us in a number of illustrious cases a very much better example. The writing of Huxley, for example, is so clear and so well organized that the material which he presented made its appeal not merely to the technical reader, but also to a very large audience of intelligent people outside of the special university group, and Huxley's influence both in England and in America is due in no small measure to the form in which he presented his excellent material.

He demonstrated as clearly as anyone can demonstrate anything that bad style is not necessarily connected with clear scientific insight and sound scientific material.

It is widely recognized that such a neglect of form as I have indicated appears in much of our university lecturing. The assumption of the ordinary university lecturer is that if he presents a certain body of material so organized that it seems to him to be fairly coherent and logical in its character, it is a matter of small moment whether it appeals to the students because of its literary form or whether it is easily intelligible to them because of its careful adjustment to their present stage of development.

Whatever specious justifications we may offer for neglect of form, we all recognize its value. We exhibit this fundamental respect for form in the assent which we give to the statement that experience is very valuable in developing strong teachers. What does experience do for the individual? It helps him to make a better and better selection of his material and to adopt more effective modes of presentation. I dare say there is no one who has observed university teaching who has not seen the common mistake which is made by the instructor who for the first time comes before a class and attempts to present the matter to which he has been devoting himself as a graduate student. Such an instructor invariably goes into too much detail in the presentation of the specific subjects in which he is more particularly interested. In my own observation I have never known this to fail in the case of an instructor in psychology, and the more highly trained the individual the more probability there is that the class will hear some detailed account of investigations which are by no means of sufficient general importance to justify the time which is given to them. The intelligent college teacher as he gains experience comes to recognize the fact that the student gets more out of a few salient points clearly made than he does out of the minutely detailed discussions of special subjects. And as the years of experience accumulate, this instructor improves as a teacher because he has learned to some extent how to select his material. Fortunately the advantages of a course of study thus carefully arranged by an experienced teacher are transmitted

through the students who take the course. The form of arrangement adopted by the great teacher is therefore likely to perpetuate itself in the work of his students. But even here the form of arrangement usually suffers as it passes to a second generation, because the reasons for the particular selection made by the original master are lost and the main outline suffers in the hands of those who do not understand the grounds for its formulation. In other words, the student unfortified with principles of selection loses in the process of imitation some of the best virtues of the great teacher. Furthermore, because the student finds a form of arrangement so easily at hand, he is very likely to regard all form as a natural or inevitable phase of instruction which will take care of itself without specific attention.

Teachers in the lower grades of schools have become very clearly conscious of the importance of suitable form for the material which they present. Take a teacher in the first grade of the elementary school as an example. The information which such a teacher can impart to her pupils is on the whole relatively very simple. Almost any adult would have enough information with regard to counting or with regard to the methods of reading and writing to contribute what is necessary in the way of intellectual achievement for a first-grade child. But the problem here is not the problem of contributing information; it is the problem of so arranging this material that it shall make an appeal to immature minds. The consequence is that the first-grade teacher is recognized as skilful just in the degree in which she is able to take ordinary intellectual material and organize it in such fashion that it shall appeal to the child in that grade. Because the problem of form is here so obvious, it is a fact that there is much greater sympathy among teachers of first grades for courses that shall give them some of the principles on which arrangement depends than there is among teachers of more advanced grades. Indeed, when we come into the high school, we find that the same prejudice exists that exists among college teachers. The high-school teacher holds ordinarily that there is no such thing as a science of education. Latin and Greek can be taught and can be taught successfully without any courses whatsoever in this so-called science

of education. If we examine the matter a little more closely, however, we shall find that Latin and Greek are capable of successful use as high-school subjects just because the material available for instruction in these subjects has been so systematically organized that almost anyone can manipulate the subject and can conduct a class. We shall become acutely conscious of this fact when we contrast the relative success of a class in Latin or Greek taught by a mediocre teacher with the unsuccess of a class in history or English, or especially in one of the sciences when taught by this same mediocre teacher. The presentation of English is by no means as simple as the presentation of the grammatical forms and translation of a lesson in the classics. The literary masterpiece in the vernacular which may be selected for presentation in the English class is capable of use as a basis for grammatical drill or as a basis for the cultivation of literary appreciation or as the basis for the transmission of historical and other types of information. The result is that most teachers in the effort to meet all of these requirements fail to meet any one of them with complete success. What is true of English is true in a painful degree of the sciences. No one has devised a course of study in physics, for example, which has been generally accepted as successful for high-school children. It is perfectly clear that there is plenty of information in the science of physics which might very advantageously be transmitted to children of the high-school age. But just how this material shall be selected, how the general principles shall be presented, has not been worked out as fully as the same problem has been worked out with reference to Latin and Greek. The consequence is that everybody is dissatisfied with the work in physics in the high school, and many are disposed to question the advantage of attempting to offer it in any form.

When we pass from the high school to the college, the distinction between the lecturer and his pupil in point of maturity and ability to apprehend logical relations is very much less than was the difference in any of the lower grades. The consequence is that when a teacher adopts a form which appeals to his own thinking, he is very likely to find his students sufficiently like

himself so that the difficulties which they encounter are not serious. He therefore comes to assume more and more that there is no such difficulty as would be suggested by the statement that intellectual material must be arranged with care in a form that shall appeal to the student. The assumption in the college of a generation ago was that if the pupil did not apprehend material in the form in which it was presented to him he must be dismissed from the course and from the institution in general. The elective system has in part overcome this attitude and there is very much more general conviction on the part of college instructors now than there was a generation ago that the demands of the student that the material shall be presented in clear and coherent form should be met. An instructor who is in competition with the other members of his own department for students in his course is likely to recognize the importance of preparing his material as clearly as possible for presentation to his classes.

I hope that what I have said up to this point will make clear what I mean by the statement that all intellectual material has form, and that the considerations that relate to form are not identical with the considerations of subject-matter taken in the abstract. Given a certain fact in biology, it may be stated in a variety of different forms and certainly some of these forms are better than others for purposes of classroom instruction. Furthermore, we all of us recognize that the better form is more likely to be adopted by the experienced teacher who has tried a variety of different modes of presentation.

Let us see where we are led by the application of these conclusions to certain problems of teaching. I take it that all of us who are interested in any science must be interested in certain general questions of the limits of instruction in this subject. I mean by that statement that if my specialty is history, I must be interested, for the sake of the best possible presentation of my subject in the university and in all schools, in the question of how far down in the lower grades this subject is to be presented. Possibly some of you will object that it is no personal concern of every student of history or every instructor in the subject to contribute to the determination of this limit. I will therefore

defend my position by saying that it is at least the concern of someone in the department. There must be someone in history and geology and biology who is interested in seeing the subject so administered that it shall have its proper recognition in the lower and in the higher institutions. If we admit that someone in the department must be interested in the formulation of this material and in securing its recognition, I think that it is further obvious that such recognition and such organization of the material must be in the hands of those who have the broadest and most comprehensive view of the subject. To allow someone who is a relatively untrained member of the department or who does not know the whole field to organize the material is to neglect the highest interest of the subject itself. Now, some such evasion as this is exactly what is going on in most of our discussions of the subjects which we are teaching. A college professor is very likely to say that he is absorbed in carrying on researches in biology or in botany or in historical subjects, and because of his absorption in these researches he has no time or energy to consider the question of whether these subjects should be taught in the high school, and if they should, how they shall be conducted.

Even this man ought to recognize that his absorption in research involves some interest in a few graduate students and as a matter of practical activity he finds himself in contact with students who come to him from the lower schools. I am sure that we are all of us acquainted with the complaints that such a specialist is constantly pouring into our ears with regard to the bad preparation of these students from the lower schools. They do not know how to think, we are told, and they have no ideas. Their information is loose and disorganized. If they could only have commenced with this great specialist and could have done their work with him from the beginning, how much better they would have been prepared for the type of work that they now rise into in the graduate school under his guidance. Why does not this specialist stop for a moment and consider that all of this complaint which he is making against the lower schools is nothing more nor less than a criticism of his own neglect for these

lower schools? I once had a colleague who constantly criticized the physics in the lower grades, and when I called his attention to the large service which he could do for high-school education by planning a course in physics that should be adequate, the only answer which he had was that the subject ought not to be treated in the high schools. I asked him if he had any good grounds for this assertion and so far as I could learn the only ground that he had was that it was so badly taught that it should not be taught at all. Consider the narrow view of anyone who in this day and generation would hold that the high-school student, especially that student who is not going to go forward to college, should not be introduced to some part of the science of physics. This student will spend his life among trolley lines and telephones and other similar electrical devices. Is the school not to supply him with any of the information that would make him intelligent with regard to the character of these devices? Such a position as that assumed by our austere physicist is certainly untenable, and the proper answer to anyone who holds that physics cannot be arranged for presentation in the high schools is that that is not the question under debate. Physics is going to be taught in the high school, and all of the other sciences are to be taught. The question under discussion is, who shall organize them for this presentation? Shall we allow relatively untrained students who go into the high schools to do the work of organizing these subjects, or shall some of our better scholars devote their highly trained energies to the preparation of this material? I think that there can be no doubt as to the final answer to this question. The organization for presentation of each of the subjects of instruction is a matter of very highest importance and will ultimately command the services of the best-trained members of each of the departments.

This conclusion to which we have come is the foundation of the demands which we make from the point of view of the department of education for a careful scientific study of the principles of education. Whoever devotes himself seriously to organizing the subject-matter of any given department will in-

stantly become aware of the fact that he is in need of certain types of information not included in his own department.

For example, many of the difficulties of organization of our courses of study in colleges and in other schools would be very much reduced, if not entirely eliminated, by a careful consideration of the historical development of these institutions and of the courses of study which are now offered in them. I am astonished to find how little college men know about the historical development of their own institutions. In a vague general way they know something about the origin of mediaeval universities, but they have devoted very little attention indeed to the history of American universities and their development. We are reminded in much of the current writing of American colleges of the fact that the American college of a generation or two ago was distinctly a professional school preparing for a certain number of so-called learned professions. The course of study has been modified rapidly in recent years because the American college has become a general center for the accumulation of all sorts of knowledge and for the presentation of this knowledge to the most diverse types of students.

Again, not only must our specialist be acquainted with the historical development of schools, but he must also be acquainted with some of the facts which grow out of the careful study of mental processes. In a sense we are all of us students of mental processes. We are all of us interested in the question of making clear to an immature mind new material. It is sometimes very obvious that the difference between an immature mind and the trained mind is so large as to offer a serious obstacle to the transmission of knowledge. The physiologist who tries to describe a microscopic section to one of his classes and then to utilize this section for the reconstruction of a solid organ encounters a very nice problem of training space perception. The type of information that is required for projecting a flat surface into depth so as to make up a solid object is a very highly cultivated type of space imagination. A similar difficulty to that which the physiologist encounters presents itself to the teacher of solid geometry. The teachers of solid geometry found a few

years ago that one of the most serious difficulties in their work was to induce the students to imagine the solid figures from the bare outlines given in the textbooks. Here again the bare outlines, while enough to suggest solid figures to the trained mind, were entirely inadequate for the uncultivated mind. The skilful teacher of geometry and physiology must be sufficiently acquainted with the nature and difficulties of space perception so that they will devote a suitable amount of attention to the cultivation of the type of imagination necessary to overcome these difficulties.

Turning from these fairly obvious examples of the necessity of studying mental development, we may call attention to the fact that there are other somewhat less obvious differences in mental capacities which are of first-class importance to the teacher and should be understood by him if he is to work out any adequate adjustment of his relation to his students. The good teacher has sympathy for his students, so that he formulates his material in a variety of ways. Whether he does this because he has learned through past practice that material must be thus presented in a variety of different ways in order to appeal to all of his students, or whether he does it because he is consciously aware of the fact that the mental processes of another individual are different from his own, he is in either case dealing with a principle of teaching rather than a part of his own science.

It is obvious that everyone who is successful in the art of teaching must have complied with the demands indicated in the foregoing discussion; that is, he must have organized his material in such a way that it has significance not only for his own mind but also for the minds of others. The teacher who does not sympathize with his pupils fails very commonly because he does not recognize the type of fact which we have just been discussing. He insists that everyone should think the formula out as he has thought it out, and he has no patience whatsoever with the student who is not able to comply with this demand.

Some of you are doubtless raising the question in your own mind as to where this information is to be gained with regard to the peculiarities of different students, and I am frank to say that

the information is at the present moment not available in such form as to be universally accessible, and I cannot with any degree of assurance promise that within any short period we shall be able to furnish a formula which shall cover all these individual differences. But I am prepared to make a very vigorous demand for intelligent support in the investigation of these individual differences. Certainly the instructor in zoölogy and Latin and Greek cannot be called upon to make a minute examination of the mental characteristics of all of his students. He ought to be sympathetic with the efforts of others whose special business it is to make such investigations. I do not think that it has been customary for the members of these special departments to be fully in sympathy with the efforts of the educational psychologist to define the differences here under discussion. It is a part of the business of every department of education to define these individual differences and make them available in some generalized form. That we have not yet accomplished the task or that we cannot say definitely when the task will be accomplished is simply the result of the general fact that academic men and university organizations have in general neglected and criticized this type of study.

In attempting to convince a body like this of the practical importance of such considerations as this, it is fair to answer the objections that have frequently been raised that education, as it is taught in our university departments, has not contributed up to this time a full solution of the problems that are here suggested. Let me call your attention, in the first place, to the fact which has been brought out in the earlier discussion, that most of the pedagogical doctrines now recorded in the books on these subjects relate to the lower grade of schools. One notable effort has been made to contribute to the literature of mental processes in higher grades. President G. Stanley Hall has written a book entitled *Adolescence*. It is a matter of regret to me that it is quite impossible for me to recommend this book as a clear statement of either the problem or the available material bearing upon the mental abilities of high-school children, and yet it represents a very legitimate effort to describe a special period of

mental life and to lay down certain general principles which must be utilized in the preparation of a course of study for this period of life. If we criticize Hall's statements and his material, it becomes immediately our responsibility to correct his defects by a collection of better material, and the only way that I know by which this can be accomplished is to interest those who are in direct contact with high-school children in the observation of their traits and in the development of a body of knowledge which shall ultimately give us the information which we need.

I have made this proposition from time to time to groups of high-school teachers and I must confess that the response which I have received makes me very pessimistic as to the outcome of the plea. If the work will not be done by the regular high-school teachers, then we must have institutions which shall devote themselves to the study of this problem and shall have available high-school students who can be made the subjects of investigation. Such an institution we have in the School of Education in this University. Such an institution also exists in Teachers College. But here again, it is extremely difficult to find those whose interests are in the careful scientific examination of these educational problems. We engage a high-school teacher to teach Latin or German or any of the other conventional subjects and we find that he is absorbed in his specialty. We find, furthermore, that he has been trained all through his graduate study and even in his college course to hold to the prejudiced and, I believe, absolutely unjustifiable position that his only function as a prospective teacher is to become acquainted with the subject-matter with which he is to deal. It takes us a long while to break down this prejudice in the case of a new teacher, and by the time we get the prejudice broken down we find that the teacher has become so valuable and competent in the actual manipulation of the high-school children toward whom he or she has now succeeded in cultivating a scientific attitude that he is very likely to go to some other position and dissipate his acquired knowledge. There is of course a very large body of high-school material produced which has certain fundamental principles underlying it. A good textbook means that the teacher has selected the material in a

certain subject and has arranged it according to the best of his experience. It is unfortunate that most editors of textbooks do not give us the principles upon which they have operated. Indeed, it must be confessed that in many cases they do not themselves become clearly conscious of these principles.

But not to lose sight of the main point—all this goes to show that we must cultivate in academic circles at least a tolerance for this sort of study in those who are preparing to teach in the high schools. We must, furthermore, cultivate a tolerance for similar studies in relation to all schools; we must dissipate the prejudices which now express themselves in such statements as these: the great teacher is born, like the poet; there is no necessity of any special study except the study of subject-matter, and there is no necessity of institutions and departments which make it their special business to investigate educational problems and develop general principles of education.

Thus far I have argued as if the whole matter were in question and as if the department of education had to defend itself from the beginning and show why it should be brought into existence. Let me now take a somewhat different attitude in the matter and call your attention to the fact that the educational departments of our American institutions are rapidly coming to be recognized as among the most influential and important departments in the institution. I think that no one who is acquainted with Columbia University can be in any doubt at all as to the importance of Teachers College in that organization. It is by all odds the most influential single department in carrying Columbia University to the country at large. The reason for this is that the present educational situation in this country is so thoroughly unorganized that any kind of leadership is sure to have a hearing and sure to have a very large influence. The problem of directing educational activity rationally which has been neglected for so many years has now reached an acute stage and is demanding some solution with such a degree of urgency that the solution must be provided by our educational institutions.

From a merely economic point of view it is obvious that the country demands a better treatment of educational questions. We

spend for schools in this country more than we spend for any other public institution except our penal institutions, and this large public fund cannot be administered without some careful and scientific consideration of the way in which it shall be administered. The enormous endowments which are coming to our American institutions are bringing, in such institutions as the Carnegie Foundation and the General Education Board, the demand for a more intelligent organization and a clearer statement of the purposes for which our college endowments are being spent.

You may neglect, if you like, as individuals, the problem of the arrangement of subject-matter which you teach. You may absorb yourself, if you like, in what you please to call mere research. If you do neglect the form in which this material is presented and if you do refuse utterly to consider the problem of fitting this material to other minds, you will find that the influence of your research will be very much smaller than it otherwise would be and you will find that you are dropping behind in a movement which has already come to exercise such an influence in academic circles that it is, from a general point of view, by no means negligible. I personally have reached the state of mind where I receive criticism of the department of education with perfect equanimity. There was a time when the departments of physics and biology and of the other sciences were subjects of criticism. They were grudgingly given the somewhat uncertain footing of a separate organization in a school of science. Many of the great eastern universities began in this way and regarded these new bodies of knowledge with a great deal of suspicion and contempt. But these new bodies of knowledge have now reached the stage of development where they can meet the contempt of the older departments with perfect serenity. Indeed, it is the classics which are now on trial for their lives rather than the sciences. The registration of scientific departments has increased with such enormous rapidity that the anxiety for registration is no longer in the science departments.

A like change is coming in regard to the study of education as a formal science and as a general prerequisite for admission

to the teaching profession. So long as the demand for economy in education was not urgent, bad instruction in the universities could be tolerated. Bad instruction in the high schools was tolerated because the high-school courses were under serious consideration and many intelligent persons were in doubt as to the desirability of offering at public expense anything beyond a simple elementary education. But the moment the demand for economy becomes urgent, as it has come to be in our present-day life, and the moment the high school becomes an established institution and the college a common place of instruction for the sons and daughters of the ordinary man, the demands for a study of education are so imperative that we of the education department are no longer on the defensive. We are clearly in a position to offer something that the other departments must seek. We should be very glad indeed to make contributions to the work of other departments as soon as they arrive at that degree of intellectual maturity where they recognize the importance for their own existence of this special study of education. In the meantime I commend to the consideration of any of you who are in doubt as to the importance of the special treatment of educational problems the more general consideration with which I started, namely, the consideration that our higher education suffers because form is neglected and often unrecognized in the eager pursuit of subject-matter.

MANUAL TRAINING IN THE SERVICE OF PHYSICS

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The purpose of the following article is to call the attention of American educators to a pedagogical movement in Germany which combines both in elementary and secondary courses instruction in physics and manual training. The writer became acquainted with the movement through contact with one of its leading exponents, Seminaroberlehrer O. Frey, through an inspection of the laboratory under his direction in the Leipzig Lehrerseminar, and through reading the book which he has prepared to be used as a teacher's manual and textbook for pupils.[1] This article will accordingly consist, first, in a discussion of the place and significance of the movement with especial reference to American conditions, and second, in a brief review of the book which represents it.

The general point of departure of the movement is suggested by the name—in German, *Arbeitsunterricht*. There is no English expression which is exactly equivalent to this, but it may be translated as instruction through work or constructive activity. The English word "work" has too much the special meaning of antithesis to play or idleness to serve as a complete translation of *arbeit*. *Arbeitsunterricht* in physics, as Herr Frey conceives it, may be described as instruction in physics through the production by the student himself of the apparatus to be used and the individual discovery, so far as possible, of the laws of the science. This method is contrasted on the one hand with mere instruction—that is, the communication of ready-prepared knowledge—since it encourages the student to investigate and determine for himself the uniformities of physical phenomena. On the other hand, it is contrasted with instruction *in* manipula-

[1] O. Frey, *Physikalischer Arbeitsunterricht*. Leipzig: Ernst Wunderlich, 1907, pp. 192.

tion or *in* manual activity. Manual activity is here the means and not the end. This procedure is, then, distinguished from the ordinary laboratory physics in that here the student produces the apparatus himself, and from manual training by the fact that the aim is not manual skill but an insight into physical laws. Or, to put it in another way, *Arbeitsunterricht* may be regarded as laboratory physics plus production of the apparatus; or as manual training plus the aim of gaining knowledge thereby —or more properly speaking manual training transformed by the fact that the aim is knowledge and not manual skill.

Besides being justified by the demand for concentration of the school curriculum and for economy of time this innovation seems to the writer to be further justified by a critique of the present methods of instruction in both physics and manual training, especially the latter. In this discussion secondary education is especially in mind, but the application may also be made to the higher grades of the grammar school.

First, in regard to physics. In this branch, as in allied natural sciences, the instruction has been revolutionized within the last few decades by the introduction of laboratory work. The merely descriptive textbook is either displaced by one which includes directions for laboratory experiments or is supplemented by a laboratory manual. In this newer instruction the student comes into direct contact with the processes about which he is to learn and thus gets an insight into them which only actual perception and manipulation can give. This principle so underlies all modern pedagogy that it needs no further justification.

The criticism of modern school physics which is made by Herr Frey, however, is that it does not carry this principle of first-hand acquaintance with the facts to its full extent. There still stands between the pupil and the elementary processes he is to investigate, no longer a mere verbal description, to be sure, but something which forms a considerable barrier to direct knowledge, namely, the apparatus. That is, for a complete understanding of the meaning of an experiment, one must have a complete understanding of the apparatus used. But when the stu-

dent is required to use a finished and more or less complicated piece of apparatus, he understands neither the construction of the apparatus nor the results which are obtained by means of it.

To overcome this difficulty, Herr Frey has emphasized two points: first, simplicity in the apparatus, and second, construction of the apparatus by the student himself. Simplicity of the apparatus has three advantages: First, it enables the student to grasp more easily the principle which underlies its use and thus to understand the results which are obtained with it; second, it makes possible the construction of the apparatus by the student himself; and third, it makes the cost of the apparatus so small that many schools which could not otherwise afford a physics laboratory can do so. Perhaps the greatest value of Herr Frey's book is the skilful elaboration of a course with very simple and easily constructed apparatus. The idea at the basis of the work is not altogether new, but its successful application is an important service to pedagogy as well as to physics.

The advantages in the construction of the apparatus by the student himself are discussed in the theoretical introduction to the *Arbeitsunterricht*. The chief stress is laid upon the importance of the motor sensations which result from the muscular activity. The point will be more fully discussed in the review of the book.

So much for the relation of the *Arbeitsunterricht* to instruction in physics. It is also related, as was already remarked, to manual training. The principles which justify manual-training instruction in the schools are not always clear in the minds of educators and of school officials. Two general tendencies, however, may be distinguished. The first is toward a manual training which has for its aim general knowledge and education to which it subordinates mere technical and manual skill. This tendency originated in the general movement toward self-activity in the Pestalozzian and Herbartian schools, and another expression of it is the kindergarten. In the kindergarten the aim of the multifarious activities is elementary knowledge of form, color, number, social relations, etc. This

sort of justification of manual work in the schools is the one commonly made by educational theorists and investigators. A notable example is the position taken by Professor Dewey in his *School and Society*, that elementary spinning, weaving, and other similar activities should be introduced into the elementary schools for the purpose of acquainting the child with the industrial processes which underlie modern civilization.

The second tendency is toward a manual training which has for its purpose the acquirement of a trade or at least the partial acquirement of a trade, and which therefore sets as its standard progress in manual skill and subordinates general knowledge and education. The discussion has here of course to do with manual training in the general schools. Special trade schools come under a different principle. This second conception of manual training in the common schools is the one which obtains in the minds of the general public, and, it must be confessed, of a very large number of school administrators. That such is the case is evident when one considers the manner in which manual training is carried out. The schools are furnished with elaborate shops and costly machinery. The pupils confine themselves for long periods of time to certain elementary manual processes until they are able to acquire a technical skill in them. At the end of a year, perhaps, they are able to show as evidence of their work a piece of furniture or some metal work. The goal has been reached by long-continued practice on the same simple process until it was perfected. If the object of manual training is technical skill, that object is reached, but if it is knowledge either of natural science or of industrial history the time is almost as good as wasted. The pupil has acquired art and not science; but the evidence of the attainment of the art is more easily comprehended by the average citizen than that of science, and it is the average citizen in whose eyes manual training is to be justified if money for its maintenance is to be obtained. As a result, manual training tends to take more and more a practical turn.

It is not the purpose here to argue in detail for the one type of manual training as against the other. It is sufficient to point

to the general consideration that the aim of the common school is to give a general education. To give a specialized training in a trade impairs the main work of the school. If the aim is general education, it can be brought about better in some other way. If the aim is practical, it is illogical and unjust to prefer one trade above another. Assuming the position then without further argument that the aim of the school is general education, it follows that manual training must be brought under this aim. It is this that Herr Frey does when he makes manual work a means to the attainment of knowledge of the fundamental laws of physics. In his own words: "Not merely to drill the pupil but to make him conscious of that which the drilling has effected, and to train him in the estimation of work values, must be the goal of such instruction" (p. 29.)

How this general principle is carried out we may best show by examining somewhat more in detail Herr Frey's discussion of the principles underlying the *Arbeitsunterricht*. In his "didactic-psychological" introduction, the author begins by tracing the recent development in instruction in physics and shows that it has been in harmony with the psychological demand, first, for *Anschaulichkeit* or direct presentation to the senses, and second, for a procedure which will bring into play the fullest activity of the pupil. The demand for sense presentation was met by the use of the stereopticon and of demonstration experiments in the classroom. But another step in advance was made when individual experimentation was introduced. At the same time emphasis was laid upon the quantitative aspect of experimentation. Now both of these later advances rest for their value upon the fact that they bring into play a hitherto neglected class of sensations, the sensations of movement. These sensations are essential to a complete development of space perception, for this development can only be brought about through movement. They are therefore essential to all measurement and estimation of distance. Their ordinary residue effects as "traces in memory with resonance properties" constitute an essential factor of all our apprehension of spatial relations.

The fact that it is a debated point in modern psychology

whether the value of active processes for experience consists in the sensations of movement or in some form of central organization which is the condition of the movements does not modify the importance of the active processes themselves. The author's theory is therefore on valid ground in its essential point, the emphasis on activity in the acquirement of experience.

The author next proceeds to show that the correct view of physics is not that of a series of objects existing beside one another—the static view—but rather that of a causal series of events—the dynamic view. If muscular activities are necessary in building up the concept of space as an extension, they are all the more necessary in building up the concept of space as a "field of force." By means of muscular activity we reach the concept of "mechanical work . . . . from which all physical instruction must take its departure." The concepts of two factors in mechanical work, mass and velocity, are developed from the sensation characteristics which arise from a muscular movement encountering resistance on the one hand and varying in the manner in which it is carried out on the other.

There is also a characteristic thought process (process of bringing concepts into relation) which is fundamental to physics and which is exercised when we carry out purposeful movements—that is, the process of estimation. An example of such estimation is that which a jumper makes when about to spring. It consists in a clear comprehension of the amount of muscular activity represented by movement sensations which is equivalent to a given amount of objective work. To develop the ability to make such estimations accurately—as, for example, when dealing with weights—is part of the business of physics instruction.

The writer would be disposed to take exception at this point to Herr Frey's psychology. The assumption that the estimation of distance in making a spring involves a thought process is an example of the psychology which reads into perception the logical relations which reflection may find involved in it. Perception is a much more direct process. But this process can be made the basis of reflective analysis. Here again, therefore, the

criticism does not essentially affect the validity of his method of instruction.

In general, then, the method of instruction here advocated is to put the pupil in such a situation that he experiences through his own bodily movements the phenomenon to be studied, and then to lead him to analyze his own experiences, and from this analysis work out a concept of the phenomenon. The way in which this analysis takes place appears more fully in the consideration of the separate large divisions into which physics is divided.

The order of treatment of the different divisions, as well as the manner of treatment, is determined by the character of the movements through which knowledge is gained. That is, the sensations of movement, as the author puts it, determine the choice and arrangement of material.

The first and fundamental concept according to this scheme is the concept of physical work. This should not, as is commonly done, be treated as a simple element, the variations of which are apprehended by the pupil as corresponding to the different degrees of exertion he puts forth, but should be analyzed into mass and velocity.

In a similar way the author takes up the concept of acceleration. This is to be taught, at first, not by means of a falling body, since the movement is too rapid to be apprehended, but by a blow as of a hammer. This is to be treated as a form of accumulation of work and to it can be related the accumulation of work in spring tension, loading of an electric battery, air compression, etc.

The next concept is that of a stream of work or energy, and this can best be formed through the perception of a flowing body, as of water or air. The concept then may be applied to the flowing of gases, of heat, and of electric currents.

The final main concept to be gained is that of oscillation or vibration. The starting-point for the apprehension of this form of work is found, as is commonly done, in the pendulum. But the analysis of the pendulum movement by means of geometrical projection is not used because this is too foreign to sensation

experience. An ingenious device for connecting the pendulum movement with a movement of the pupil consists in joining the pendulum by a rod to the pedal of a bicycle and first letting the pupil drive the pendulum by running the bicycle, and second letting the pendulum drive the bicycle.

The author treats also in his introduction the technique of instruction and of the preparation of the course. He takes up such questions as the teacher's relation to his pupils, the management of a class, the arrangement of a schedule, the procuring and making of apparatus, etc. The apparatus is developed on the basis of three simple pieces: the rod (*Stab*), the coupling-box (*Muffe*), and the axle (*Achse*). Suggestions are given finally as to fitting up the workroom. This section has many useful suggestions of a practical nature.

The second or practical part of the book consists in the details of a course of study based on the principles already laid down. As an illustration of the manner in which the exercises are elaborated, a description of the first exercise is given.

This lesson is entitled "The Windlass." The windlass is constructed in very simple form and consists of a cylinder of wood with a small hole through the center through which passes an axis of iron. The axis rests in slots or holes in two upright sticks, or in metal pieces fastened to the sticks, and the sticks are fastened at the bottom to wooden blocks. A crank handle is attached to the axis and with a string and weight the axis is complete. The instructor now directs the pupil to lift a weight with the windlass and leads him by means of the question-and-answer method to compare the force necessary to lift a weight with and without the windlass. This comparison is then made quantitative, but only by means of estimation. Application, through a series of questions, is then made to larger windlasses, and the pupil calculates how much he could lift with a large windlass made in the same way, and finally how much a man could lift. He is then told that there are windlasses with which a man can lift still greater weights. He fails to work out theoretically how this can be; so another windlass is constructed. This time it is a small model made of a cork cylinder, a knitting needle

for an axis bent so as to make a crank, and two pieces of bent tin for a support. For units of weight hairpins are used. The pupil is now led to discover through his own trial that a pin on the crank will balance two on the string. He next finds that one pin placed farther out on the crank will balance three, and so on. He then estimates the distances, and formulates the results into a table under the direction of the teacher, but is not given any theoretical discussion of the phenomena. He has, however, a direct understanding of the phenomena, and that in quantitative form.

To appreciate the skill with which the course is constructed, one must consult the author's own discussion, which seems to the writer to form a notable contribution to the effort to work out pedagogical methods based upon modern psychological knowledge.

LIBRARY READING IN THE HIGH SCHOOL

I

THE SPIRIT AND AIMS OF THE WORK

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The study of the masterpieces, as it is ordinarily done in the high school, has a distinct and undeniable value; yet there is a widespread feeling among teachers that something more is demanded for the best literary development of the pupils. The concentrated study of a few selections, no matter how good, cannot take the place of a broad knowledge of books and authors. This has its own particular relation to the personal culture of the student, and can come only through intelligent and continued contact with libraries, and with people who are interested, in a positive and helpful way, in the contents and the makers of books. The recognition of this fact is responsible for the advance of the "outside reading" idea. It may not, therefore, be inappropriate to examine at some length the more important phases of this recent addition to our curriculum, considering how it may best be made of real and practical worth to our school systems.

Much of the library reading work which is now being done has a somewhat undesirable tendency. It inclines to make the reading of books a burden, and to force the so-called "standard" literature upon the minds of pupils not sufficiently developed to appreciate it. This is surely getting at the matter from the wrong end. Reading should be done from an inner desire, not from an outward stimulus. The great work of the teacher is to create the desire. The spirit of the work is everything. If the teacher is unsympathetic, if she makes of herself a task-master, and insists upon the children's reading books in which they have no interest, merely with the determination to make them take what is "good for" them, whether they like it or not, her work is

bound to be more or less of a failure. She must never forget that she is trying, first of all, to develop in her pupils a taste for literature. She must, therefore, approach her task with tact and patience, but most of all with sympathy. She must constantly draw upon her own large knowledge of books, and at the same time forget that she has that knowledge. She must be able to imagine herself a restless, action-loving, hero-worshiping boy, or even, if need be, a vapid, sentimental, feather-brained girl. She must put herself in the place of the pupil whose literary needs she is trying to supply, giving him not what she herself admires, but what his crude young appetite craves. Passing resolutely by her beloved Walter Pater, and Matthew Arnold, and Henry James, she must bestow a willing patronage upon such lesser lights as Anthony Hope, and "Ralph Connor," and Ernest Thompson Seton. She must learn even to appear politely interested in the Graustark books, and not to evince too much horror when she finds herself pursued, as she is pretty likely to be, by the *Hound of the Baskervilles*.

Some critic, who does not deal with young people, will no doubt be scandalized at this literary heresy. "What is to become of our standards," he will cry, "if our school teachers tolerate anything but the best?" Those whose work is with boys and girls may answer, "It is not that we love Walter Pater less, but that we love our pupils' happiness more." If the teacher appears shocked and irritated by what the young people are reading, she makes them reticent and suspicious. They soon learn to conceal the truth, and she fails to discover their untrained tastes and undeveloped possibilities; she loses her hold upon them, and misses the great opportunity to lead them on from a lower grade of literature to a higher. This is why the teacher should possess unlimited sympathy with the raw propensities of youth, and why she should be willing to lay aside her own more cultivated notions in order to meet the demands of her pupils. In the library reading work, as in all the study of literature, it is imperative to remember that the pupils must be taken as they are. They may not be as fully developed as their instructors would like to have them; but the work must begin

at the point which the pupils have reached, and must lead on, through unwearied patience, to something better.

The attitude, then, of teacher and pupil should be one of friendly interest and confidence. Cheerfulness should be the prevailing note in all their intercourse. The pupils should regard their reading not as a task, but as a pleasure, and themselves not as victims, but as favored friends.

The aims of the work may be many, but there is no harm in freely admitting that one of the greatest aims is to give the pupils enjoyment, since it is only by enjoying books that they can ever come to love them. It is necessary that children should be allowed and encouraged to read what they themselves find interesting, to the end that their delight in books should be increased.

The next important aim is the broadening of the pupil's knowledge and thought through contact with books, and with other minds than his own. It is impossible that a boy should be a member of a library reading class for the four years of the high-school course without unconsciously absorbing an amount of knowledge about literature and its creators far beyond, both in amount and value, the actual reading which he himself has done. Even a cursory acquaintance with books, the handling of the volumes passed about in class, the reports of his classmates on the work they have been doing, the teacher's remarks and criticisms, must inevitably make an impression, largely subconscious, but none the less valuable, concerning the relative worth and interest of books.

Information, as such, must, of course, from the teacher's point of view, constitute an aim. Among the older pupils, especially, it is possible to direct attention to books of travel, sociology, history, and science, and to carry on a course of study which will lead to a real accumulation of inspiring facts (there may be such!) on the topic under discussion. A view which goes beyond the narrow horizon of everyday life is opened up by such accounts of travel as *A Japanese Interior, The Mystic Mid Region, Our Old Home,* or *Russian Rambles.* Books that deal with sociological subjects, such as *The Woman Who Toils,*

Toilers in the Home, How the Other Half Lives, and *The Workers,* can give the boys and girls about to leave the high school a more thoughtful outlook upon some phases of "real" life, outside the walls of the schoolroom. Many boys, if properly introduced to the science department of the library, will peruse the longest tomes on wireless telegraphy, railroad building, irrigation, or even the nebular hypothesis and Darwinism. The information that they get from these volumes may or may not be of practical value, but it always has a certain culture value, and frequently serves to emphasize a natural bias which later leads to a life-occupation. It serves, at least, as an apperceptive hook on which to hang future knowledge. What has just been said refers largely to non-fiction books, but fiction itself need not be scorned, even by pedagogical Gradgrinds. Its information on history and other serious subjects is often very considerable; and best of all, if it is not actually false, it becomes a textbook for that most difficult and tremendous of studies, human nature.

Another end to be attained is the cultivation of ability in expression, both oral and written. The pupil is required to make reports on what he has read, to estimate, in an elementary way, the literary value of a book, and to put into words his judgment of the characters and situations set forth in the volume to which he has given some attention. He must in this work provide himself with a vocabulary for which he would not otherwise have much use, and bring into play a style of expression which it is profitable to master. The work should be almost wholly oral, thus giving an opportunity for connected and original talking, not usually available in the ordinary classes of the school. Of the written work, something more will be said hereafter; it should form a small but valuable part of the library training in expression.

Most important of all our aims, if not the easiest to keep before us, is the development of the individual—the training of each child toward a real appreciation of good books, and the enjoyment of those great benefactions which books have to give. The accomplishment of this purpose must necessarily go hand

in hand with that mental and moral development which is, or ought to be, the end and object of all the teaching of the schools. Like all the truer and better phases of education, the process is a slow one, and can be consummated only after the most careful and painstaking labor; but in the achievement it is conclusively worth while. Through contact with fine books, as with fine people, the character expands and ripens, and the individual becomes more completely the product of those influences which are most worth while in life.

TRAINING IN ILLITERACY[1]

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If there be any matter connected with the large subject of education on which the people of this country would agree, it is that the ability to write correct and reasonably clear English is its most important practical result. Every school, or at any rate every secondary school, is expected to give to its pupils the power to express themselves in correct and reasonably clear English; and failure to do so in any large number of cases is regarded as discreditable to the school.

Most laymen, whether parents or employers, would assume as unnecessary of proof the further proposition that the responsibility for good English rests with the teachers of English in the schools. As to this second proposition, however, there is ground for difference of opinion; the main purpose of this paper will be to show that the present very spotted record of our schools in this matter of English is not to be laid at the door of the teachers of English alone. The training of teachers in English and the quality of the textbooks have improved immensely in the last fifteen years. We have not yet arrived at perfection, but even the imperfect knowledge that I have of the teaching of English in the schools makes me sure that this work is in the main sound and effective. The fault which we admit must too often be found with the result does not lie wholly, at any rate, with the teachers of English.

What other causes, then, can be found for this lamentable failure of our schools? One can think offhand of several. There is the fact that the teacher of English in the city schools is swamped by the ever-increasing flood of the foreign-born, and must not infrequently impart the rudiments of the language to

[1] Revision of an address on "Co-operation in English" delivered before the New England Association of Teachers of English, at Springfield, Mass., November, 1908.

children who out of school hear only Italian or Yiddish or some dialect of Bohemia or Poland. Another cause is that the teacher of English is expected to teach two subjects in a single allotment of time. A boy must be taught not only to write, but also to read his literature intelligently and accurately as well; and the teacher of English in most schools has one allowance of time for this double job. I often wonder how the teacher of English gets any time at all for composition. Another cause is the astonishing appetite that the present generation has for the cheaper newspapers and magazines, a sort of reading which seems invented to asphyxiate any growing sense for style. All these are undoubtedly true and serious causes; but none of them, I think, is so grave as the one which is the subject of this paper: the condoning of illiteracy by teachers of other subjects. On this matter there can be, I believe, only one reasonable view; this is a practice which is discreditable to the schools in which it is found. It is a shameful waste of the time of the boys and girls in the school, and of the money of the taxpayers, that results which are laboriously built up by the toil of one set of teachers should be thrown down and scattered to the winds by the indifference or ignorance of their associates. No business house would hire one set of clerks to collect and tabulate accounts, and then allow the other clerks to tear up and scatter the sheets in any way that suited their own convenience. Yet that is closely analogous to what is taking place in most of our schools, if only one adds that the first set of clerks must afterward pick up and piece together the *disjecta membra* of their original achievement, and so do their work all over again. Such a state of affairs seems absurd and monstrous when baldly stated; yet a very cursory examination would show that it exists in most of our schools today.

Now, to begin with, this condoning of illiteracy cuts square across what I suppose to be one of the fundamental principles of teaching, that a habit can be acquired only by unremitting and unbroken practice. The new science of psychology has confirmed this principle and formulated it more clearly, perhaps; but since teachers began to teach, all wise practitioners have insisted on the

scriptural doctrine, "precept upon precept, precept upon precept, line upon line, line upon line, here a little and there a little." The command of a correct and clear style in writing must be a habit: except for the almost minute minority who are gifted by nature, mankind gains control of its mother tongue by the long and slow process of transmuting rules into instinctive action. This is especially true of writing correctly. A word must be spelled in the one right way so often that the visual and auditory and motor channels by which it comes to its place on the paper are worn into a rut so deep that it becomes an effort to break away from that particular combination of letters. Commas and semicolons and periods must have been used so often and so regularly in their appropriate place in given combinations of words that they drop from the pen without thought on the part of the writer. Simple or compound or complex sentences must have been used so frequently that they shape themselves to the flow of ideas and impressions without conscious thought. And the less the background of culture the more certain it is that this habit of correct and clear expression on paper can be built up only by constant and unremitting repetition of the one right form.

What happens to the boy or girl whose habits of expression are thus in process of slow creation when he goes to a school where respectable English is not insisted on in all his classes? In a morning of perhaps five periods he will spend one period under the supervision of a teacher of English and four under other teachers. If now for the one hour he must spell and punctuate carefully and write complete and grammatical sentences, and then for the other four he writes and speaks as carelessly and illiterately as he chooses, how far ahead is he in the formation of this habit that the world outside the school expects of him as a matter of course? In most cases he has lost ground; and in schools where such culpable laxity of organization prevails, the teacher of English is eternally rolling his pupils up hill to see them fall back in the succeeding hours. The average boy is so far human that he will ordinarily take no more trouble than he has to; and it is indubitably harder for him, as for grown people, to write carefully. If his teacher of history or physics

or zoölogy will accept exercises with misspelled words, no punctuation, and abortive or undivided sentences, the average boy will shower them on him with careless and unstinting hand; and the efforts of the teacher of English to establish the habit of writing respectably become a vain fighting of the air.

It is not a theoretical state of affairs, of which I am writing, which might occur under the worst imaginable conditions. I have lately written to the headmasters of half a dozen public schools which were recommended to me as likely to show the best practice in the neighborhood of Boston; and they have been kind enough to send me exercises in other subjects than English which had been corrected in the customary way by the teacher of the special subject. An examination of these papers shows that the notice taken of bad English varies curiously, even in the same school. In one school the papers in botany were thoroughly corrected for English, even to the punctuation. The papers in zoölogy from the same school were written in sentences so shapeless that the meaning was often obscured by the lack of grammar, and whole paragraphs were innocent of both periods and capital letters; yet there was no indication that the teacher of zoölogy felt in any way disturbed or aggrieved by this illiteracy. In another school the papers in zoölogy again, as it happened, were full of shapeless sentences; and even so gross a misspelling as "a sought of thin skin" had been allowed by the teacher to pass without notice. But in this second school the papers in German sight translation were corrected thoroughly for their English, even to the point of insisting on the proper use of quotation marks. Thus in two schools which are considered to be representative of our best teaching in New England boys and girls are exposed to teachers whose influence on them is toward the formation of habits of illiteracy and against the formation of the habits of correct expression which they are expected to have when they leave that school. It is not too much to say, I think, that this is an unpardonable and discreditable waste of the time and energy of those boys and girls and of the money of the taxpayers who support those schools.

Nor is this waste necessary. If we begin to press this reform,

we shall be met at once by the cry that other teachers are already overburdened, that their backs will break if they must teach English as well as history or German or zoölogy. This cry we must expect, and it is not to be taken too seriously. The answer to it is twofold. In the first place it is a protest against doing something which no one ever asked should be done. No one expects that a teacher of history or of physics shall in the time given to history or physics teach English also; not only that, but it is not desirable that he should teach English, unless he has had special training for the purpose. The only thing that can be expected is that such a teacher shall either decline to accept written exercises that are splotched with misspelled words and abortive sentences, or else that he shall take notice of such illiteracies. He has no right to confirm bad habits in his pupils. In the second place, as the few papers which I have examined show, we are asking for no impossibilities. Good teachers of other subjects already, and apparently as a matter of course, take notice of bad English, and do their proper share toward the creating of the habit of writing respectably. A boy who is under such a teacher of botany or German is strengthening his habit of good English in at least one hour outside his regular instruction in English. And if a teacher of botany can do this, it is hard to see why a teacher of zoölogy should not do the same thing. It is therefore no scheme from Utopia that I am proposing when I hold that every teacher in a school should negatively, at any rate, take his or her part in the slow but steady formation of correct habits in the use of English.

Indeed schools, and we may hope that their number is not few, have already attacked this problem successfully. One excellent plan, which originated in the English High School of Boston, has been further developed and applied at the High School of Commerce in Boston. There, as the head of the department of English writes me, they hold

> that it is unjust to the teacher in a department other than English to require him to correct more than casually mistakes in English, and unjust to the student who has proved his knowledge of a particular subject, to lower his mark in that subject because his English is poor. We have,

therefore, adopted the following plan. In case a pupil's test or exercise is noticeably defective in grammar, spelling, or punctuation, he must rewrite the exercise, correcting both particulars, or revise it before the mark given him in that subject is recorded. Second, without warning to the pupils of English, teachers frequently collect exercises and tests given in other subjects and correct them from the standpoint of English, entering the English mark thus obtained with the regular English marks.

We may suppose that other schools already are accomplishing this end in the same, or similar ways. Such a plan, if quietly and systematically enforced, removes the whole evil of which I have been speaking. It has one decided advantage from the point of view of the school: it encourages teachers of other subjects to look on reasonably correct and clear English as their right. Among the papers from schools which I have looked over, I found in some of the papers in zoölogy cases where two, or even three, sentences were run together without capitals or punctuation; and a boy in a class in political science wrote: "If the electoral college were abolished it would be very harmful." Now why should a teacher of zoölogy or of political science be expected to plow through these drifts of obscurity and illiteracy? If the idea could be implanted in the minds of such teachers that their time is wasted every time they have such unintelligible stuff handed in to them, we should be well started on the way to getting rid of the evil. If the normal boy be allowed to put in slovenly English he will certainly do so; but there is no reason why teachers of other subjects should not find out the degree of accuracy and correctness to which the teacher of English thinks that a given class should have attained, and then politely but firmly decline to look at any paper which does not reach that standard. And if a teacher will not assert his rights, the headmaster of the school should assert them for him and insist on his getting them.

Furthermore, every teacher in a school should feel that his or her real work is education, and not merely the teaching of a special subject. At all times it is his duty to make war on illiteracy. Until all teachers take this broad view of their profession and of their opportunities for good, we shall have badly educated children—children who know whether the third leg of a

grasshopper is on its mesothorax or its metathorax, but who, when they go to a business man to ask for work will expose their illiteracy as soon as they put pen to paper.

Now what can be done about the situation? The great number of stenographers and typewriters whose education has ended with the grammar school or the high school, except for some short training in a business college, shows that it is not unreasonable for average people to master the elements of correct expression; yet anyone who has read the examinations for entrance to any of our colleges has come to look on blundering and slovenly English as the regular equipment of the young men who are supposed to be the pick of their communities. There is no need of any new theory on the subject; for any headmaster or superintendent one may ask will answer automatically, "Every lesson should be a lesson in English;" and so in practice it is, but usually in bad English; and there in most cases the matter will rest. One of the bad specimens I have quoted above had been passed without notice by the headmaster of the school. Superintendents and school committees must bestir themselves, and light fires under the teachers if we are to have practical and effective attention to this very elementary question. It would not be a very difficult thing for the chairman of a school committee or a superintendent to collect papers occasionally from the schools for which he is responsible; and I feel pretty sure that in most cases he would be scandalized by the results. Then it would be a simple matter to announce that all teachers of all subjects would be held personally responsible if they received exercises badly spelled and obscurely expressed. Here I am not speaking without personal experience, for I have just seen a kindred experiment tried on the freshman class in English composition in Harvard College. Last autumn it was announced to the class that any piece of writing in which there were as many as two misspellings to the page would be called a failure. Four or five weeks afterward bad spelling had mostly disappared from the writing of a class of four hundred and fifty men. Within a few days a student who has been teaching in one of the practice courses in a neighboring school has told me that

he has tried the same experiment on children of the upper grades of the grammar school, and with entire success. If the method has worked in these two cases why should it not work in others? If teachers of all subjects will resolutely decline to read exercises which are below the standard in correctness and clearness of English the boys and girls in our schools will acquire the habits of writing presentably. If these teachers go on as they are doing today, ignoring and condoning slovenly and incorrect writing, the same children will grow up with stumbling and discreditable habits of expressing themselves.

THE LATIN PLAY RECENTLY GIVEN IN THE WESTERN HIGH SCHOOL, DETROIT[1]

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When the new edition of Professor F. J. Miller's dramatization from Virgil, *Dido, the Phœnician Queen,* was published, the Latin teachers of the Western High School resolved to present it. Mr. Miller has worked over parts from the first and fourth books of the Aeneid. While following the original closely, he has adapted it very ingeniously. Much of the "business" (to use a stage term) nevertheless is left to be worked out by those who undertake the play.

The play was given February 22 in our school auditorium, and was repeated the next week. All of the scenery was painted by Miss Willoughby, instructor in Latin and drawing, with the aid of one of her advanced pupils. The costumes and stage properties, such as spears, shields, lamps, and musical instruments, were made under the direction of the Latin teachers.

The drama is in four acts, of three scenes each. The Prelude, commencing with the familiar words *Arma virumque cano,* was sung before the curtain by a chorus dressed in white, and produced a wierd effect.

On the raising of the curtain an open square on the Acropolis before the Temple of Juno in the new city of Carthage is disclosed. Water carriers and workmen pass by and drop incense on the altar, then a chorus of maidens dressed in light green enter and sing a hymn to the dawn. As they disappear, Aeneas and *fidus* Achates, who have started out to explore the unknown land, enter and are soon accosted by Venus disguised as a huntress. In answer to his inquiries she tells Aeneas that he has reached the land of Africa, and relates the story of Dido's flight from

[1] Presented at the Classical Conference at Ann Arbor, Michigan, April 2, with 21 stereopticon illustrations from slides prepared by Principal W. A. Morse.

Tyre. As she bids him farewell and vanishes, he recognizes too late that it is his goddess mother.

Soon Dido's train enters. Scarcely has the queen taken her place to administer justice when cries are heard in the distance and a band of Trojans is halted by the guards. Their chief, Ilioneus, having by permission addressed the queen, is promised protection; the queen, moreover, promises to send in search of the lost Aeneas. At this point the hero, who has remained in concealment, discloses himself, to the amazement of Dido and the great joy of the Trojans.

The next scene shows Venus and Cupid in a forest. Calling Cupid to her side, the goddess instructs him to assume the form of Ascanius and inspire Dido with love for Aeneas. Delighted to work mischief, he struts off on his errand.

The third and perhaps the most effective scene, the banquet, is in Dido's palace. Only one table is shown on the stage, but the noise and laughter in the distance show that others likewise are feasting.

Act II opens with a scene in the queen's chamber where the shrine containing the bust of her former husband Sychaeus with lighted censer before it is seen. After struggling against the new love she finally, on the advice of her sister Anna, yields and assumes the brilliant garments laid aside during her widowhood.

In the second scene we see the Idalian grove. Juno in a rage comes upon Venus with the kidnaped Ascanius at her feet and proposes a peaceful settlement of affairs, to which Venus with a sarcastic smile assents.

Next we behold Iarbas, the Moorish prince, one of Dido's many rejected suitors, in the temple of Jupiter Ammon upbraiding his god because he has allowed Aeneas instead of one of his own worshipers to gain the victory.

Months have passed since Act II and we are again in the open square on the Acropolis. In the background groups of people are passing to and fro and in front Aeneas is busily engaged in helping build the citadels of Carthage; Mercury appears and warns him not to suffer his glorious destiny thus to be ignominiously thwarted. Now, all alert to leave the land, the king

orders the boats to be prepared; he is overheard by Dido, who has meanwhile entered, and is bitterly reproached for his design and entreated to stay; but in vain.

The three scenes of Act IV are in Dido's palace. After weighing various plans she decides on her own death. Hearing the songs of the sailors rejoicing at their departure for Italy, she calls down the sevenfold curse on Aeneas, plunges her sword to her heart, and falls.

The mysterious maidens of the Prelude again appear singing,

> Tantae molis erat Romanam condere gentem.
> Sic volvere Parcas.

All the parts save that of Dido (taken by one of the teachers) were assigned to students. They entered into the undertaking with enthusiasm and did the hard work of memorizing and rehearsing without complaint. The audiences both evenings were large and appreciative. Of course all such work is difficult and distracting, as well for the teacher as for the pupil; yet it is clear to us that the giving of the play was well worth while because it stimulated a fresh and more intelligent interest in all our Latin work.

MAKING A HIGH SCHOOL A CENTER OF SOCIAL LIFE

LOUISE R. GIBBS
High School, Prescott, Arizona

The boys and girls who come to high school are just about the age when they begin to realize that there is such a thing as a social world and that there is a place in it for them. I hold it to be within the field of school work to help them find that place and to fill it to the best of their ability. Association with people is counted as one of the most valuable gains in any educational world; in college, I think we shall all agree that the people we met, the different types of minds and characters we were thrown with, the men and women with whom we came in contact, sometimes forcibly, and not always enjoyably, gave us a broader and more valuable education than that we gained from books. In the same way, although in a less degree, is this true of high-school life, and the student should have the opportunity of meeting socially those whom he sees every day in his classrooms. The boy or girl who simply comes to school and studies, and goes home, misses much that he or she needs.

Another reason for emphasizing the social side of school life is the happiness it brings, and it surely is within our mission as teachers to do all in our power to make our boys and girls happy. There is nothing which brings more joy if you love the children, as I believe every real teacher must, than to see a group of schoolboys and schoolgirls having a genuinely good time. They ought to be happy and have all the good times it is within our power to give them. Give them some good times right in the place where they work, and the memory of the pleasures will put a certain glamor over the prosiest of school-rooms. The only room in my own high school that I remember loving was the twelfth grade, for it was not until the fourth year, as we met to prepare for graduation, that our class came together in any social way.

The attitude of the children toward each other I find much benefited by more social life in the school. Generally boys and girls form their own friendships without any assistance from parents or teachers, but quite often we find a shy one who is left out and who needs many opportunities before he or she can make friends, and we all need friends at any age. Strange prejudices arise when people have simply a sight acquaintance which is overcome when they learn to know each other.

The attitude of the boys toward the girls and the girls toward the boys, that very difficult and delicate thing to handle during the high-school period, is, I firmly believe, made more rational and sensible by a good deal of social contact. The boys ought to have girl friends; they need each other then as in after life, and the only problem is to keep these friendships reasonable and wholesome, and as free from sentimentality as possible. I am well aware that this position of mine has been attacked on the ground that the high-school gatherings engender foolish love affairs between the boys and girls, but it has been my experience that the young people who know each other well, who are together on the athletic grounds, and the evening social gatherings, are much less apt to be silly about their friendships than those who are not. Do what we may, we cannot head off these youthful love affairs, and I am not at all sure I would if I could. Of course once in a while some pretty little girl loses her head over too much attention and has to be reasoned with firmly, or some dreamy lad forgets to get his geometry lesson while he fills the fly leaf of his book with the name of his lady love. But if you know what is the matter with these particular lads and lassies, it is much easier to deal with them and to give a timely word of warning. I should feel I was not well prepared for the best school work if I did not know who liked whom best among the boys and girls.

One of the best results I have noted from the social life in the school is the spirit of democracy which is bound to be fostered, provided the social life is general for the whole school. The greatest mistake which could be made, I believe, is to let the natural leaders monopolize the social functions and allow the

backward ones to be left out. But if various kinds of social events are planned and the affairs are managed so that none are omitted, then all have an equal opportunity, and the result is necessarily democratic. Suppose the mayor's daughter does dance with the wash woman's son! It is a good thing for both of them, provided she is a nice girl and he is a nice boy. Force of circumstances will separate them soon enough into different social strata. Let the public school use its leveling influence between the rich and poor as long as possible. I want every member of our high school to feel that he or she has a place which is just as good as any other place in the high-school world, and that if any distinctions are made they are based on merit and ability. I believe this spirit of social democracy is a very, very important thing to foster in our country in this day and age when everything is tending toward class distinction; and I see no institution which can foster such a spirit, except the church and the school.

In mentioning the aids to school life from the introduction of the social side, let me not forget the totally different attitude it occasions between teachers and pupils. The teacher and pupil who have only a classroom acquaintance know each other very superficially, for neither one is, or can be, quite natural under those conditions. They are unavoidably on different planes, and if a pupil sees you only under such circumstances he is apt to gain a totally wrong impression of you and of your attitude toward him. But if you meet the boy in a game of tennis, or play with the girl on the basket-ball court, if you dance with them in the evening, and have a good visit about something which has nothing to do with history, mathematics, or Latin, the boy or the girl learns to know you, to understand that you are human, and that you think and feel as they do about many things. Under such circumstances it is easy to build up a good comradeship which makes them listen more attentively to what you say in school, and brings about an affection which has far more influence than the scoldings or dignified dissertations one may deliver from his little pedestal as teacher.

In the practical working-out of the social idea in Prescott,

we have resorted to all the familiar methods and to a few that are perhaps not familiar. Athletics are a tremendous help; the football and the trackwork keeping the boys together in interested groups, while the tennis clubs supply the same thing for the smaller and younger boys and girls. The basket-ball teams are about as strong a feature as we have for the girls alone, although the girls' glee club of last year was another good plan to get the girls together. Little incidental things help. One of my girls this year has come into school from a ranch some distance away, and she has no piano where she is staying in town. She spoke one day of how much she missed her music, and I asked her to use the high-school piano when she wanted to. Often now she stays after school and plays, and I have noticed a number of girls staying with her and gathering around the piano to listen or sing. It gave me the idea that we might work up very informal little musicales after school.

But these plans are all for groups, and I believe it is a wonderful help to have the high school all together socially. Friday afternoon we have allowed the pupils who cared to—and that meant the large majority—to stay for an hour or so to dance and talk. Generally all the teachers stayed, and always some of them. This was the best method of all, I believe, to get the pupils acquainted and bring out the more reticent ones. Once in about six weeks we plan for an evening dancing party in the school auditorium, to which are invited all the members of the high school and their friends, and we urge particularly the attendance of the parents. The children certainly enjoy these gatherings, and I have found them to be innocent, happy good times for all of us. By means of the dances many little social customs may incidentally be taught which all young people should know, and these evenings are apt to bring out ease of manner and self-assurance just at the most gawky and awkward age. Only the person who has grown up without self-poise knows how much it means to attain it early in life.

EDITORIAL NOTES

NATIONAL EDUCATION ASSOCIATION PRINCIPLES

Those leaders of the National Education Association who inaugurated the practice of making a declaration of principles at each annual meeting must have contemplated that the Association would, as a professional and expert body, express its views in respect to educational matters of contemporary interest. If this was the original intention it was a commendable one, for surely nothing but good could result from this great organization taking a stand in regard to educational problems engaging the attention of people at any time. Theoretically, the principles in which the N. E. A. makes revelation of its professional creed at each meeting are formulated by a group of members who are closely in touch with education in all its phases in every part of the country, and who are also critical students of the course of educational development, and of the progress of the schools throughout the world. They are chosen because they represent the best judgment of the times in respect to the treatment of the problems which are most pressing at the moment. As a result of their careful reflection upon the needs of education from the kindergarten through the university, they put forth a series of propositions which are designed to enlighten citizens and teachers regarding the course which they should pursue in solving the educational problems of chief importance at the time. In a certain sense, these principles should constitute an educational bible for boards of education, as well as for the individual teacher or superintendent, or other person who is engaged in the care and culture of children.

THE DENVER MEETING

In the light of these general remarks, let us run over the eleven principles presented at the Denver meeting of the Association. The first and perhaps the deepest impression made upon the present writer in reading these principles was that all except three, or at the most four of them have little or no bearing upon pressing educational problems. As a whole they could not constitute a guide to the present-day superintendent or teacher trying to solve the problems now confronting him. There is a certain conservatism, restraint, and dignity adhering to the principles; but these quiet virtues have been secured at the expense of timeliness and effectiveness. The educational magazines are just now asking, "What is the matter with the National Education Association? Are its halcyon days gone by?" In these editorial notes, I have on past occasions suggested what I think is the chief difficulty with the Association, suggesting that it is in danger of losing touch with contemporary educational methods; and an examination of the principles pre-

sented at Denver seems to confirm the diagnosis already made of the affliction from which the N. E. A. is liable to suffer, even if it has escaped a serious attack thus far.

THE SCHOOL IN A DEMOCRACY

The first principle declares that state-supported schools are essential to the perpetuity of a free democracy. The schools must be responsible to the people. The success of the American people is largely due to the training given to the young in the public schools. Now, as one reads these statements, he wonders why they need to be made at this epoch in our educational development. Certainly no one doubts them. They cannot possibly influence present practice in any way, because they are universally recognized in the organization and administration of our educational system. These propositions might have been of service fifty years ago, but we have passed the point where they are of any contemporary interst. One dislikes to say it, but this first principle seems in all respects to be merely platitudinous.

The second principle declares that the state must support elementary and secondary schools and universities, and must train its teachers. Here again is a principle which is not directed at any problem of interest to us today. The policy advocated in this statement is already accepted by every state in this country, so far as the writer knows. The latter part of this second principle declares that public schools should train youth for commerce and the industries. This has a certain amount of contemporary value, but it is really not very great, because our people are now practically convinced of the wisdom of the course it indorses, and the policy is being worked out as rapidly as possible. What would be of service to contemporary education would be a well-thought-out declaration regarding what commercial and industrial subjects should be made a part of the public-school curriculum from the kindergarten through the university. This is one of the questions which are now of interest to teachers; and if the N. E. A. could make concerning it a declaration embodying the highest wisdom of the day, such a declaration would be of positive assistance in our existing troubles.

THE FUNCTION OF THE SCHOOL

Principle 3 is almost wholly platitudinous. It states that the public schools must confer culture upon the individual, and put him in possession of the achievements of the past. The schools must provide equal educational opportunities for all. Surely these matters have not been in question for a half-century in this country. The latter part of the principle states that the schools must not be conducted with reference to the demands of any particular interests. This sounds as though it might relate to some present danger, but it is very doubtful whether it will be of interest or service to anyone. If one attempts to apply it to educational practice in his own community, he will see that he does not get forward at all by doing so. If the N. E. A. thinks a crisis is imminent, where certain business interests may dominate the schools, it

should have made explicit statements, pointing out the impending danger, and laying down definite, concrete propositions instructing teachers what subjects or methods are tending to break into the schools which should be shut out. Then the principle might, perhaps, be of service in localities, if there are any, where the danger complained of exists.

Principle 4 repeats statements made in preceding principles in regard to the necessity of keeping our schools democratic. The latter part of the principle calls attention to the necessity for increasing educational advantages, and for securing better trained teachers. Everybody agrees, and has agreed, to this for many years. The only problem now is—how may we realize the aim stated in this principle? If we could have a summation of the wisdom in the world today regarding the ways in which better trained teachers can be secured, we should be helped by such a statement. But the mere declaration that we need better teachers butters no parsnips whatever. The last phrase in this principle is the first really definite suggestion, directed toward present problems. It states that "fraternities and secret organizations of every sort must be excluded from the social life of the school."

Principle 5 is utterly platitudinous. It states that the public schools must train for citizenship more fully than they have in the past. What we need to know is how to train for citizenship. It doesn't advance us in the slightest degree to state that we are not training for citizenship as effectively as we should do. What studies will prepare for citizenship? When ought these to be introduced? What methods of presenting available material will prove effective? What has been the experience of nations across the sea that have been experimenting along this line? What we need are declarations covering these problems which perplex us sorely today.

TRAINING FOR CITIZENSHIP

Principle 6 indorses the purpose of the American School Peace League, and urges teachers to co-operate with it in the attainment of its ends. Here is a timely declaration which ought to produce good results.

Principle 7 calls attention to the need for giving more attention to the physical welfare of school children. It recommends that the National Bureau of Education be provided with facilities for distributing scientific information regarding the best methods of promoting physical education. Here again is a declaration which is in accord with our present-day needs. The writer of this note thinks it would have been of great service if the Association could have formulated some definite suggestions regarding the physical care of children. It cannot be doubted that there are many practical suggestions fully warranted by modern scientific investigation; and if these could have been stated in a simple way, and become a part of the creed of the great N. E. A. they would have attracted the attention of many teachers who now are entirely unconscious of them. The professional and secular papers would take them up, and give them publicity. Here is an

opportunity for the N. E. A. to be of service—to select from all sciences whatever is of practical service to education, and embody them from time to time in their declaration of principles.

Principle 8 rejoices over the demand for better qualified teachers, which will lead to longer tenure of office and to more generous compensation.

BETTER QUALIFIED TEACHERS

What is accomplished in a declaration of this sort? How will it be used by anyone to solve any problem which now confronts him? Not that the declaration gives expression to error in any way, but merely that it repeats what is practically a truism now in education. Principle 9, which puts the N. E. A. on record as indorsing the use of school buildings and equipment by communities for social betterment, has the right sort of up-to-dateness about it. Principle 10, which recommends the consolidation of rural schools "wherever practicable," is a good illustration of the neutral character of many of the N. E. A. declarations. About the only objection that has been urged the last few years to consolidation is that it is not practicable. Now, if we could have some authoritative declarations relating to this matter of practicability, summing up the experience of communities in which it has been demonstrated that consolidation is practicable, then rural-school authorities could use them to advantage in their various communities. The last part of principle 10 expresses the gentle hope that the children of rural communities may come to enjoy some such benefits as are now enjoyed by children in the cities. To the present writer, there is a suggestion of humor in the great National Education Association putting itself on record in indorsing a proposition of this kind, as though it were necessary to give expression to this "hope" in formal declarations.

Principle 11 states that the N. E. A. indorses all organizations and institutions which are working to promote the educational interests of the country. Could any sane mortal doubt that the N. E. A. would indorse such agencies?

The present writer feels strongly that the National Education Association in its formal declarations should deal with actual concrete, pressing problems in a scientific way, so far as this is possible. Platitudinous remarks will not command the respect of educational people today. Why should not the declaration of principles be made a summary of the most vital matters discussed in the various sections of the Association? In this statement of principles, the N E. A. should appear at its best. The opinions of the wisest leaders should be reflected in these declarations. If the purpose is to be neutral in the declaration of principles, then it is inevitable that the N. E. A. will lose its hold to a greater or less extent upon the progressive teachers of this country.

M. V. O'S.

PROFESSOR OWEN AS MEMBER OF THE EDITORIAL BOARD

It is gratifying to be able to announce that Professor William Bishop Owen, recently appointed Principal of the Chicago Normal School, who as Associate Professor of Education in the University of Chicago was a member of the department in editorial charge of the *School Review*, has consented to become one of its advisory editors. As Dean in the University High School since 1901, Professor Owen has had an important and creative share in developing the organization of a rapidly growing high school, the point of confidence of two great types of secondary schools—the academic or cultural and the manual training or industrial—and an integral part of the educational laboratory and school for the training of teachers —the School of Education of the University. Some of the problems and new developments arising out of this work have found expression in Professor Owen's contributions to the *School Review*, "The Problem of the High-School Fraternity" (September, 1906), "Social Education through the School" (January, 1907), and his recent editorial, "Signs and Symptoms of Unrest in the Field of Secondary Education" (April, 1909). These contributions are typical of Professor Owen's unusually keen appreciation of educational problems that are genuine, pressing, rooted in actual conditions, and his ability to define the issue fairly and work out a solution in positive terms. The article on the high-school fraternity, written at a time when there was much discussion pro and con and prior to the very general condemnation which has come to prevail, was unequivocal in its conclusion that the institution was an unworthy expression of social instincts and must go. At the same time, the purely negative solution of the problem, which has characterized the official, and apparently the final, action of educational authorities in many communities, was regarded in this and in the subsequent article on "Social Education through the School" as only a partial and relatively superficial solution. The school in co-operation with the parents' association must find ways of developing normally those social instincts which left too much to themselves misconceive and slavishly imitate the external appearances of fraternity and society life. That it lies within the responsibility of the school to deal with this problem not merely in terms of dignified and school-masterly prohibition but in positive and constructive terms, involving if need be experimentation, is likely to be borne in upon the mind of the reader of these articles and to suggest further applications.

W. C. G.

BOOK REVIEWS

Literature in the Common Schools. By JOHN HARRINGTON COX. Boston: Little, Brown & Co., 1908. Pp. viii+227. $0.90.

Our first impression of this book was that Professor Cox had been "at a great feast of languages and stolen the scraps." Professor Cox has, indeed, drawn much of his material from sources that may be called common property, yet he has so ably digested this material and so interfused it with the spirit of helpfulness for the grade teacher that we shall let our carping critical attitude pass with the quotation which Moth made to Costard. It is, in fact, no mean thing to dig up the old familiar generalities and platitudes about "Literature and Life," "Why Study Literature?" "Criticism," "The Emotional Element," "Imagination," "Thought," "Form," "Tributaries of the Literary Stream," and the other hazy distinctions and definitions which delight summer-school gatherings and literary assemblies. Such a course of study does not, we wish to say, imply necessarily that superficiality is its distinguishing mark. On the contrary it means that many persons—even many of our teachers in the grades—who are not privileged to take a thorough course in literary work are entitled to establish a background of the literary activity which has manifested itself in the world, and to feel that literature is not a mere matter of dictionary chasing and literary parsing. To obtain a wider, a more penetrating, a more sympathetic understanding—a more philosophical basis, if you will—of the manifold influences that lie behind all literary expression, thereby awakening and stirring the deeper consciousness of the permanent and universal elements in literature, is no small matter. So, if we may turn right about face on our quotation, we may say that Professor Cox has made a feast of the scraps. Many teachers who read this pleasant little book will feel that they have come into a new realm.

But Professor Cox does not devote all of his book to pretty little metaphysical distinctions and dissertations. Much of the book is of practical use. He gives an intelligent model lesson founded on Holmes's "Old Ironsides," discusses very thoroughly a course of study in literature for the grades, makes suggestions for memorizing, and gives many ideas and titles for selections in reading. The list of books made for further readings and for the prescribed course is enhanced in value by naming the publisher of each book and stating the price. If the teachers of the grades will take this book in the way of a suggestive course, and will not attempt to dose their pupils with its many nice, sometimes dogmatic, assertions, they will find it a good book for their daily use.

The Pearl. A Middle English Poem. A Modern Version, in the Meter of the Original. By SOPHIE JEWETT. New York: Thomas Y. Crowell & Co., 1908. Pp. 16. $0.40.

This beautiful elegy, our earliest *In Memoriam,* is seemingly coming to its own again. It was first given to the public in its original language by Morris in

the Early English Text Society's publications in 1864. Mr. Israel Gollancz translated it in 1891, making a line for line translation. In 1906 three translations appeared, and in 1907 and 1908 two more versions were made. Each of these translators—Gollancz, Osgood, S. Weir Mitchell (incomplete), Coulton, Mead, and Jewett—has told the story in his or her own way and according to his or her own poetic insight and power of translating. The beautiful allegory of the father who lost a precious jewel in his arbor, a spotless pearl, that slipped from his hand into the grass, and who mourns in the arbor on a day in August, after the harvest, until he falls asleep above the place where his lost pearl lies, is an entertaining tale—or, if you will, as Professor Schofield contends, a subtle theological dissertation. This father, as he sleeps, is "laid asleep in body and becomes a living soul." His soul leaves this earth and, by the grace of God, goes to a wondrously fair country beyond the realms of man, where all the hills are clear crystal, the trees azure, and the leaves of silver. In this land runs a river which the father would cross, but he cannot. On the farther shore stands a golden, glistening little maid adorned with pearls, his little daughter—a queen in heaven. She takes him to a hilltop, whence he sees the New Jerusalem and is blessed in peace and happiness.

If we omit the subtleties of the mediaeval spirit, its excessive tendency to moralizations, its spirit of symbolism, and its unnatural personifications, and read the poem for its more natural and vastly more charming backgrounds of the hills and vales, the running waters, and the singing birds, we shall be uplifted in our spirits and in our conceptions. Indeed, it is a poem that may well be introduced into our secondary-school work, not for intensive study but for supplementary reading.

Miss Jewett has not only made an acceptable translation, but she has also written an excellent, though brief, introduction which enlightens the reader in regard to the peculiar linguistic and poetic qualities of the poem. The very low price of the school edition will permit of its being put into every school library.

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Pestalozzi: An Account of His Life and Work. By H. Holman. New York: Longmans, Green & Co., 1908. Pp. 322. $0.75.

It would seem that some temerity is evinced by the writer who presents to the educational world another work treating of the life and theory of the great Swiss reformer of popular education. The bulk of Pestalozzian literature in English, French, and German is vast and imposing, yet it is steadily augmented with every year. Despite this fact there can be little doubt that Mr. Holman, in his careful study of Pestalozzi, has made a contribution of real value to thoughtful students of the evolution of educational principles. Few of the works in English are so admirably full and complete in treatment. The author makes liberal use of suggestive quotations from Pestalozzi's writings, both the familiar works and those not yet published in English translations. Thus the reader is made acquainted with Pestalozzi's educational creed, not alone as

presented in *How Gertrude Teaches Her Children*, but as set forth in his treatises, *On Infants' Education*, *On the Idea of Elementary Education*, and in the work of his last years, his *Swan Song*. By the use of quotation and summary the attempt is also made to acquaint the student with the social and moral philosophy of Pestalozzi, so obscurely expounded in his *Researches into the Course of Nature in the Development of the Human Race*, a work which no one has succeeded in translating into English. Manifestly the author has sought to treat all aspects of Pestalozzi's thought and, so far as possible, to accomplish this by presenting the writer's own words, not the critic's interpretation of them.

The thoroughness of treatment is suggested by the headings of the chapters. One of the most helpful parts of the book in orienting the reader is the first chapter on "The Spirit of the Times." Here the necessary background for appreciating the intellectual, social, and political conditions which shaped Pestalozzi's thought and determined his life-work is sketched with skill and a just appreciation of values. The subsequent seven chapters deal sympathetically with the vital facts of Pestalozzi's life in its various stages of effort, from Zurich and Neuhof to Burgdorf and Yverdon. Then follow chapters on "Pestalozzi the Man," "Pestalozzi the Thinker," "Pestalozzi's Methods of Teaching Language, Form, and Number," "Methods of Teaching Various Other Subjects," "General Methods and Views," "Some Criticisms of Pestalozzi's Theories," and finally, "What Pestalozzi Did for Education." In each of these chapters Pestalozzi's educational principles and their resulting practices are clearly presented in their mutual relations and are emphasized by numerous citations from his writings.

Adverse criticism is reserved for one of the final chapters, since the author states in his preface that he purposes "to set forth as clearly as possible what Pestalozzi thought, wrote, and did, and not to expound what the writer of this book thinks of what Pestalozzi thought, and wrote, and did." When the author does consent to sit in judgment upon the theories and schoolroom procedure of Pestalozzi he enters upon the criticism with manifest reluctance and urges the reader afterward to "stand back and respectfully take a full view of the whole man; lest he forget "that we do but brush the dust from the shoes of a master. . . . ." Perhaps the writer's deep admiration and sympathy for Pestalozzi's great heart and noble life have operated somewhat to devitalize the character of his criticism. Nevertheless he suggests some shrewd objections which might well be urged against the simultaneous oral method, the method of mutual instruction, and the theory of language, form, and number as fundamental elements in all intuitions—methods and doctrines ardently upheld by Pestalozzi throughout his teaching experience. But the critic has made no attempt to lay bare the fundamental fallacy of Pestalozzi's method of object-teaching; hence his criticism is incomplete at an important point. To leave the unsophisticated reader with the impression that object-lessons *per se* are educative, that description and definition of things, arbitrarily selected, may rightly be regarded as an end and not as a means of education, is to assist in making possible a continuance of the dreary and formal "object-lesson" from which educational practice is but just beginning to break away.

Mr. Holman's book is eminently readable. The style is good, at times very good, and a few illustrations taken from miniatures and sketches in the possession

of Miss Mayo, the daughter of Pestalozzi's famous English disciple, add to the interest of the work. The strength of the study lies in its excellent organization, its complete and sometimes fresh treatment of an oft-discussed theme, its liberal use of quotations from Pestalozzi's less familiar writings, and its brief but suggestive criticism.

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Brief German Grammar. By ROSCOE JAMES HAM AND ARTHUR NEWTON LEONARD. Boston: Ginn & Co., 1908. Pp. 241. $0.90.

A First German Book. By GEORGE M. HOWE. New York: Henry Holt & Co., 1908. Pp. 223. $0.90.

German Inflections. By H. C. BIERWIRTH. New York: Henry Holt & Co., 1908. Pp. 82. $0.40.

Among the long list of beginners' books in German that have been placed upon the market within the last few years, Ham and Leonard's *Grammar* is, without doubt, one of the best. It is intended, according to the statement of the authors in the preface, to meet the practice of those teachers who believe that a thorough grounding of the essentials of German grammar is the best preparation for reading and speaking German. The book can be completed in college classes by the end of the first half of the school year, if desired; but it is more complete than the ordinary beginners' book. One of its best features is the well-selected anecdote in each lesson, upon which the German and English exercises are based and which affords excellent material for German conversation. It is doubtful, however, whether the grammatical facts are always presented in the best order. The complete subjunctive inflection, for instance, appears before the declension of the weak adjective, and the conditionals before the comparison of adjectives and the inflection of personal pronouns.

The *First German Book* is constructed upon the inductive plan. The first 126 pages contain the material to be covered by the student, the second part contains the summary of the grammatical material presented in Part I. The defects of the book are more apparent than its excellences. In the first place the reading material is poorly selected, it being uninteresting and its vocabulary not sufficiently practical and everyday. In the second place the large number of unexplained constructions in the reading material of the first part of the book is likely to prove bewildering to the beginner. And lastly the order in which the grammatical points are presented is questionable. The declension of the noun should come before the subjunctive of indirect discourse and before a full explanation of separable and inseparable prefixes.

Bierwirth in his little book attempts to group according to types, not as is usually done according to parts of speech, all the different accidents of the language. The idea is admirably carried out, and the book will no doubt prove valuable as a reference as well as a drill book for first- and second-year students.

J. H. HEINZELMAN

THE UNIVERSITY OF CHICAGO

Charles the Bold, Last Duke of Burgundy, 1433–1477. "Heroes of the Nations." By RUTH PUTNAM. New York: G. P. Putnam's Sons, 1908. Pp. 484.

According to the author's preface, the admission of Charles of Burgundy to the list of national heroes is justified by his connection with events rather than by his personal qualities, and it has been her task to write the life of a man placed in the foreground by circumstances rather than by character. The reader can hardly be expected to feel the deepest interest in such a hero, but the biographer has at least succeeded in presenting a vivid and scholarly narrative.

The great extent of territory over which Charles ruled, extending as it did in a broken line of rich duchies from Auvergne and Savoy on the south to the coast line of the Netherlands, gave him an influence in European politics that a wiser man might have used to greater effect. It was the dream of the last Burgundian duke to unite his possessions by conquering Lorraine and then to have himself crowned king of the united territories, thus forming a strong state between France and Germany. Foiled in this plan by the astute Louis XI of France, and humiliated by two defeats at the hands of the Swiss, he fell without glory at Nancy when only forty-one years old, and the marriage of his heiress Mary soon transferred the vast Burgundian estates to the control of the House of Austria.

The *Life of Charles the Bold* is in reality a study of political and social conditions in France and the Low Countries during the fifteenth century. It will well repay a reader who wishes to learn of the life of court, castle, and town in the days when feudalism as a political institution was disappearing before the rising spirit of nationality. The author's keen understanding of motive and character, and the gentle humor that underlies much of the story, give the book the justification which its central character fails to assure. Excerpts from contemporary writers give life to the narrative. Especially worthy of notice are the illustrations, thirty-two in number, consisting chiefly of portraits and groups taken from miniatures, all well chosen and admirably reproduced. A map and an index add to the value of the book.

DORA WELLS

CHICAGO NORMAL SCHOOL

American Playgrounds: Their Construction, Equipment, Maintenance, and Utility. By EVERETT B. MERO. Boston: American Gymnasia Co., 1908. Pp. 270. Illustrated.

American Playgrounds is a valuable collection of facts and opinions on the general subject of playgrounds. In Part I, it demonstrates the necessity of the playground as a requirement of our civilization. This is a necessary and at present a not too difficult task, as America has been awakened to the importance of play.

Instructions in the matter of placing playgrounds in the most available and useful location follow and in Part II the necessary equipment is stated upon well-recognized and conservative lines.

The rest of the book presents in somewhat abbreviated form the play pro-

cedures commonly used. In reviewing the material one is struck with the fact that all "systems" of physical training as hitherto known have been flung together into one common melting-pot with an alloy resulting which we can designate by no one name. It is appropriate however that this should be so, for racial differences are losing themselves rapidly in the heated turmoil of American life, and the mixture welds itself into the bronze of the type we are glad to call American. Just so has Mr. Mero made his playground suggestions of a mixture we can but call "play." There is and should be no choice or distinction based upon other considerations than function; the day of authority is past and adaptation has taken its place.

The scissors and paste have been judiciously used so that the last part of the book tells almost everything from how to approach the taxpayers on behalf of a playground to the abstract philosophy of play. Each item will no doubt be of use to someone and all the items are of value to the serious student of the subject, even if he is endowed with a sense of humor.

Mr. Mero has certainly given us a book containing much practical information. His prefatory statements that it is a "book of service" and not a literary

of use to someone and all the items are of value to the serious student of the subject, even if he is endowed with a sense of humor.

C. WARD CRAMPTON

DEPARTMENT OF EDUCATION
NEW YORK CITY

The Rural School in the United States. By JOHN COULTER HOCKENBURY. Published by the Author, Westfield, Mass., 1908. Pp. 124. $0.75.

This book is a pioneer, a proof in itself of the declaration made in the preface: "There has been a birth of interest in this important subject in the past dozen years." This birth is well said by the author to point to a sphere of influence and activity for educational and social leadership that is unprecedented in our educational history. A strongly felt need of a better understanding of the rural-school problem prompted the author, and, in so far as the fixing in general terms of a fairly reliable background for a more thorough study giving carefully defined conclusions helps to a better understanding, the author admirably accomplishes his purpose.

The body of the book is made up of nine chapters. The first two are intended to mark progress up to date in economic, social, and educational conditions in rural life. The third chapter compares the American rural school with the Prussian, and the fourth chapter contrasts rural- and urban-school conditions in America. Chapters five, six, and seven constitute an attempt to fix the present status of the rural school in the United States. The two concluding chapters forecast future progress. The book is well indexed, and a list of one hundred and thirty-one valuable specific references is added.

The author's discussion of the means in active use promising better economic and social conditions in the country is very good, and lacks only a summarized statement of the contributions already made by the rapidly improving rural school to make it quite complete. In assembling the causes of the rural exodus, the effect of inventions lessening hand labor and increasing the ease of concen-

trating manufacture is not emphasized. The results already at hand from the thirteen agencies for rural betterment which are discussed are given too meager consideration. Likewise, in the comparison of the rural schools of today with those of an earlier day, the study lacks intensity, both for the earlier and for the present day.

In the comparison with Prussian rural schools and American urban schools, the absence of an adequately defined type of the American rural school is the most serious obstacle. This has not prevented a convincing statement of the imperative need of a better character of instruction and far more efficient supervision in American rural schools.

Any attempt at present to fix the status of rural schools in more than a general way by a comparison with urban schools begs the question. The fairly accurate knowledge of city-school conditions which is available makes possible the selection of a type, but the lack of equally reliable and adequate information regarding rural schools makes an honest comparison by types impossible. Then, too, widely differing fundamental factors make such a comparison of little value, at best. The author's general conclusions are full of helpful suggestions. The particular are sometimes confused with the general statements.

A fine spirit of prophecy adds vitality to the last chapters. In a discussion covering twenty pages the factors of the future rural school, which are drawn with the color of feeling, are more convincing than those features for which a basis in facts has been sought. That several of the author's prophecies are already history is an aid to faith.

The appeal of this book, a definitely compelling appeal, is for more work on the same subject; for the best leadership equipped, inspired, and enlisted for life in the service of the rural school. The author has well earned a large public obligation.

ERNEST BURNHAM

WESTERN STATE NORMAL SCHOOL
KALAMAZOO, MICH.

Character-Forming in School. By FLORENCE HOWARD ELLIS. New York: Longmans, Green & Co., 1907. Pp. 235.

The author states that this book has been compiled to show that the theory of "every book on education," of Plato, Pestalozzi, Froebel, and Herbart, "that character is the chief function of the teacher, has become practice in a large elementary school, the ages of the children ranging from three to fourteen years of age."

The lessons are based on "Thoughts." The infants have but one a month while the older ones spend but a week upon each. Throughout this period, "and whenever possible in every lesson, the Thought [always with a capital T] is reiterated until the desire to *be* as the ideal has become a habit."

There are numerous quotations at the beginning of chapters and elsewhere—these are from Plato, the Bible, Ruskin, and others. The following stanza has no quotation marks, so presumably it is original:

We shall be what you will make us.
Make us wise and make us good;
Make us strong for time and trial,
Teach us temperance, self-denial,
Patience, kindness, fortitude.

The center of the course seems to be a mural painting of "St. George and the Dragon" in each of the classrooms. This appears frequently in the numerous photographs—sometimes a child is pointing at it and again a teacher does the same. There are dragons which the children are to kill—selfishness, laziness, etc. Positively the children are to rear a temple with seven columns—love, obedience, etc., supporting self-control, harmony, joy, etc.

Everything is excessively moral. On p. 161 is a lesson on "Co-operation Shown in the Formation of a Sentence." The first direction given is, "Commence the lesson by asking the children to think about something." The final statement is, "We see, therefore, that *words* can co-operate, as well as people, when used properly."

Next comes "Co-operation in Nature"—the lesson is on fertilization: "Provide each child with a simple flower; preferably one with only one pistil. . . . . They are not to be dissected, as this is contrary to the teaching of the school, 'They murder to dissect.'"

These lessons are followed by written exercises by the pupils, a number of which are printed. They are for the most part mechanical reproductions of what was given in the lessons but, on the whole, less offensively moralized.

When studying religious education in some English and German schools and moral education in French schools I was reminded of the answer given by a western pioneer to a traveler inquiring which of three roads he should take, "Stranger, they all lead to town. It don't make no difference which you take; you'll wish you'd taken one of the others." What this book represents will not help the advocates of old-fashioned religious education in England to be willing to give up even the committing to memory of the prohibitions to marriage.

When there is so much to be done in these important phases of education it seems unfortunate to have such material as this book contains receive the indorsement of a prominent publisher.

Recollections of a New England Educator, 1838–1908. By WILLIAM A. MOWRY. New York: Silver, Burdett & Co. Pp. 292. $1.50 net.

While it is stated that this book is not an autobiography the personal note predominates. Mr. Mowry has been a country boy and teacher, a student at Phillips Andover and Brown University: he has been connected with private and public schools as teacher, principal, superintendent, and member of the school board. Add to these his experiences as captain in the Civil War, as editor of various educational periodicals, writer of textbooks, director of Martha's Vineyard Summer School for nineteen years, and institute lecturer all over the country, and one can see what a wealth of material he has to draw upon. It is fortunate that these reminiscences have been preserved, for they will serve to aid students to get into touch with original impressions of an important period in American life.

The writer has evidently said what he felt like saying and in the manner he cares most for. He does not hesitate to take an entire page to tell how he maneuvered to reach Kokomo in order to meet a lecture engagement, or to reproduce verbatim a conversation of half a century ago about what may seem to the reader to have been a trivial topic. Some of these conversations and questionings remind one of George Borrow in their naïveté. Mr. Mowry has positive feelings about religious matters. He evidently felt better about his old schoolmate, Dr. W. T. Harris, after the latter had told him, "Christianity is absolute truth fighting against error, and always has been." He compares commencement days in 1885 at Harvard University and Bates College. In the former case, "So far as I observed these orations might have been given in a Mohammedan or a Brahmin college." In the latter, "On the contrary, the next day at Bates College, I think there was some sentiment decidedly religious and Christian in every one of the orations delivered."

No chapters are more interesting than those upon Dr. Taylor and Andover. Mr. Mowry places Dr. Taylor at the head of the list of American teachers and compares him to Arnold of Rugby. "Dr. Arnold's pupils became the leaders of thought and action in Great Britain; Dr. Taylor's disciples, perhaps to a greater extent, have led American life in thought, in letters, in governmental circles, in the colleges and seminaries, and in business life."

One must not let any aspect of the book lead him to overlook the pioneer work done by the author in school hygiene, grading, promotion, methods of teaching, course of study, summer-school development, educational journalism, and a host of other important advances on account of which we are better off today.

FRANK A. MANNY

THE WESTERN STATE NORMAL SCHOOL
KALAMAZOO, MICH.

A Textbook of Practical Physics. By WILLIAM WATSON. New York: Longmans, Green & Co., 1906. Pp. 626. Illustrated. $2.60.

This excellent book is neither a textbook nor a laboratory manual in its strictest sense, but is rather in the nature of a combination of the two. It is intended for second- and third-year students in college. The following sentences from the preface indicate the plan and scope of the book. "The experiments described are not intended for a beginner, but are suited for a student who has already spent a little time in the laboratory and worked through a more elementary course of experiments, such as those described in the author's *Elementary Practical Physics.* It is hoped that teachers and students will find that all the experiments which can be performed with advantage in a laboratory having ordinary equipment are described. In almost every case the descriptions and hints apply to any pattern of apparatus, no attempt being made to give elaborate instructions for working some particular form of instrument. It is hoped, however, that the figures will be found of assistance by teachers when making apparatus needed to perform many of the experiments. The aim of the book is to draw attention to those points which require care, and to indicate the sources of error which are common to all the instruments which are likely to be employed."

There are thirty-four chapters as follows: "Methods Used in the Reduction and Discussion of the Results of Physical Measurements;" "Measurements of Length;" "Weighing;" "Density;" "Elasticity of Solids;" "The Pendulum-Measurement of 'g' and Rating of a Chronometer;" "Surface Tension and Viscosity;" "The Barometer;" "Thermometry;" "Expansion of Solids and Liquids;" "Thermal Expansion of Gases;" "Calorimetry;" "Calorimetry—Latent Heat;" "Vapor Pressure;" "Vapor Density—Freezing and Boiling Points of Solutions;" "Melting Point—Ratio of Specific Heats—Conductivity;" "Sound;" "Refractive Index;" "Dispersion and Wave-Length Measurements;" "Interference;" "Lenses and Mirrors;" "Polarized Light;" "Photometry and Color Vision;" "Measurement of the Earth's Magnetic Field;" "Adjustment and Use of Galvanometers;" "Measurement of Resistance;" "The Resistance of Electrolytes;" "Measurement of Electromotive Force;" "Resistance Thermometers and Thermo-Junctions;" "Measurement of Current;" "The Ballistic Galvanometer and Measurement of Capacity;" "Measurement of Self- and Mutual Induction;" "Permeability;" "The Quadrant Electrometer."

The appendix is valuable, giving directions for simple glass-blowing, making quartz fibers, silvering mirrors, etc., and containing a series of twenty-eight tables of constants.

B. L. STEELE

HIGH SCHOOL
BLOOMINGTON, IND.

Mathematical Geography. By WILLIS E. JOHNSON. New York: American Book Co., 1907. Pp. 336. $1.00.

The author has tried to gather "subject-matter . . . . scattered [*sic*] about in many works." The reviewer, after carefully reading the whole book and testing parts of it, is glad to record his belief that the attempt is a success and that teachers will find here an intelligible account of the main mathematico geographic features of the earth, as far as they admit of simple explanations. It will be very useful to those for whom it was written.

The topics treated are: the earth's form, rotation, and revolution; latitude, longitude, time, calendar, seasons, tides, map-projections, surveys, and the earth in space. The language is for the most part clear enough, if we remember that such a work is not likely to be taken up by the casual reader or anyone who is unwilling to give it close study. Map-projections are among the most troublesome parts of mathematical geography and the treatment here given will enable anyone actually to construct all the usual ones if he be persistent. The beginner will find some difficulties that might have been avoided by a little more attention to his state of mind, as for instance in such a simple matter as finding by trial the center from which to describe a circle that shall pass through three given points. Theoretically anyone who has "had" geometry can do it at once. Practically a hint or two comes like water in a thirsty land. The figures, too, would be more helpful if they were drawn according to the prescriptions of the text. Probably the publishers are to blame for such figures as 65 and 67, where the spacing of parallels is obviously *not* what the construction requires. So too of 69, 70, 71, and 72, with others. They are purely impression-

istic, giving the general effect. They are good enough for anyone who understands the matter, but not good enough for the student who is trying to master it. But for this minor defect, for which the capable teacher will duly apologize the account of projections is a good one.

It is hard to see why McNair's experiment with falling bodies is described, as it led to nothing. The statement quoted on p. 101, "A party of missionaries bound from China, sailing west, and nearing the [date] line, etc." evidently needs correction, but slips are very rare. The chapter and appendix on the tides are a blemish in the book. They are not needed and could be very well omitted. On pp. 184 and 185 it is asserted—not in these words— that centrifugal forces in the earth developed by its revolution about a common center with the sun [or moon], are less on the side next the sun [or moon] than on the opposite side. It is one of many illustrations of the acute mind of W. M. Davis that he was first to perceive the fundamental importance of the opposite view, as he has explained in Appendix J of his *Physical Geography* (1898), and G. H. Darwin in *The Tides* (1898), p. 98. For the beginner Darwin's introduction of the arrow held parallel to itself while carried about a center is the final touch by which genius lights up darkness. Whoever is interested enough to refer to these authors will perceive that contrifugal forces are to be regarded as equal for all parts of the earth. Rigidly carried out, Professor Johnson's thought seems to give twice as great a tide-raising force on the side of the earth away from the moon as on the one next it, which is not the fact of observation.

The Whewell cotidal chart at p. 186 was discredited by its own author in 1836, as the present reviewer noted in the *National Geographic Magazine* in November, 1898.

If all teachers were competent none of these defects would be serious. As it is too much space has been given to them here. The impression the reviewer would like to convey is that they are the only serious objections that can be found to the work, which is a good one and will be distinctly useful.

MARK JEFFERSON

STATE NORMAL COLLEGE
YPSILANTI, MICH.

First Principles of Chemistry. By RAYMOND B. BROWNLEE AND OTHERS. Boston: Allyn & Bacon, 1907. Pp. 419.

There is no dispute among science teachers that the study of chemistry is usually difficult for beginners. The reason for this lies in the fact that a certain amount of work must be done before enough facts and fundamental ideas can be presented to the beginner for him to acquire any perspective. For this reason it is of extreme importance that we should put into the hands of the student a textbook which in the first place is written in an easy style; which in the second place at all times keeps well to the prime object of high-school chemistry, viz., the presentation of chemical laws and ideas and their corroboration by means of experiment and illustration; which in the third place holds and stimulates the interest of the reader and brings out the value and importance of the study by referring to practical applications in everyday and industrial life. The textbook by Brownlee and

others fulfils these requirements at every step. This book derives chemical laws in a clear, logical manner; it constantly impresses the reader with the fact that chemistry is a composite whole and not merely a study of a number of scattered facts brought out and illustrated by spectacular experiments.

The method of writing a chemical reaction, indicating by means of an arrow the direction in which the action goes on, is unique and an improvement over the usual method of using equality marks. The idea of an equation is certainly not lost by using the arrow and the advantage gained can easily be noticed when we represent a chemical action which may go in either direction, depending on different physical conditions. For example $n_2 o_4 \rightleftharpoons no_2 + no_2$ according to temperature conditions (chap. xx) or $2So_2 + o_2 \rightleftharpoons 2So_3$ (chap. xviii). Again in the discussion of reversible reactions when due to mass action this method of writing is decidedly indicative of actual results.

The tables and lists in the Appendix are perhaps more complete and contain more special information than those found in any other elementary book on the subject.

In general, the book by Brownlee and others inspires better work in chemistry in that it interests the student. It brings out the fundamental ideas on which organic, inorganic, and physical chemistry are based. Chap. xxiii on "Carbon" and chap. xxxv on "Carbon Compounds" form an excellent introduction to organic chemistry. The stress laid on chemical calculations in detail and the full discussions on the metallurgy of metals lay lasting foundations for conceptions of quantitative relations in chemistry. The able treatment of the ionization theory and electrolysis (chap. xv) and the practical applications of these theories in the industrial world (chap. xvi on "Sodium and Potassium Compounds," chap. xxviii on "Copper and Its Compounds" and chaps. xxix and xxxi on the methods and value of gold, silver, nickel, and copper plating) serve to introduce that all-important branch of physical chemistry which we call electro-chemistry. Furthermore, the newest developments of electro-chemistry in connection with the electric furnace are properly shown in chap. xiv on "Sodium and Potassium," chap. xxx on "Aluminum and its Compounds," chap. xxv on "Silicon and Boron," chap. xxiii on "Carbon," with special mention of graphite and carbides. The possibilities, the economy, and the applications of electro-chemistry are admirably treated.

The claims of the authors as stated in the preface are accurately fulfilled. These are: (1) That the experimental evidence precedes the chemical theory and that when sufficient facts have been given to make explanation necessary, generalizations of the science have been introduced, (2) that the historic order is followed in developing the theory, and (3) that the practical aspects of the science are emphasized by giving the pupil some idea of the great commercial importance of chemistry.

Furthermore, the book has many features which make it an interesting text in the hands of the pupil and a valuable assistant to the instructor. Last session six of the reviewer's students became so interested in the book when special discussions were read to them that they borrowed it, "read nearly all of it and found it fine."

R. C. PANTERMUEHL

DALLAS, TEX.

The Economic History of the United States. By ERNEST LUDLOW BOGART. London and New York: Longmans, Green & Co., 1907. Pp. 522. $1.75.

This book does not relate the political and constitutional development of the United States but records the industrial progress of our nation, beginning with the exploration and settlement of the continent, sketching the growth of industry, agriculture, commerce, transportation, population, and labor from the colonial period down to the present time. Emphasis is laid upon the essentials of economic life with a view to showing the relation between cause and effect. The narrative is always exceedingly clear and interesting, facts being grouped in such a manner as to form a continuous story.

The book is adapted for use in high school as well as in college. The helps for further study, in the form of suggestive topics and questions and also of selected references for reading, are certainly very valuable features of the work. Especially helpful is the extensive bibliography at the end. The maps and illustrations are the best obtainable. The appearance of the book is most attractive and both writer and publisher are to be congratulated upon having produced a volume worthy of the highest praise.

It is to be hoped that this text will receive the appreciation and wide use it deserves. It offers just the sort of information every American citizen should have in order to comprehend the complex industrial life of today and the material achievements of our nation. The time has come when the importance of the economic factor in history is being emphasized more and more. The industrial side of historic development is worthy of as careful a study as the political. The appearance of this book is therefore heartily to be welcomed and will no doubt be productive of much good.

An Introduction to the History of Modern Europe. By ARCHIBALD WEIR. Boston: Houghton, Mifflin & Co., 1907. Pp. 440. $2.00.

This volume is not intended for use as a textbook but should be of great service as a work for supplementary reading. It is not a summary of dry facts but rather a very suggestive and inspiring presentation of the factors which have produced our present civilization. Minute details have been avoided and only the broad outlines of development have been given. The author has tried to find the spirit of the great movements he deals with, rather than heap up the dry bones of the past. His main interest lies in tracing ideas and tendencies. Books of this sort are not very numerous and are of great value. Mr. Weir's book should find a place in every school library.

Essentials of United States History. By WILLIAM A. MOWRY AND BLANCHE S. MOWRY. New York, Boston, and Chicago: Silver, Burdett & Co., 1906. Pp. 434. $0.90.

In preparing this book the authors have kept in view the needs of pupils in the sixth and seventh grades. In a simple yet vivid and interesting manner the salient features of American history are brought out. Special prominence is given to describing the life of the people in the various epochs of our history and also to the biographical side. The usual error in books of this sort of devoting too much space to military events is happily avoided.

Each chapter contains a concise summary. A well-selected list of works for supplementary reading is given, which should prove of service to both teacher and pupil. The appendix contains a carefully arranged chronology, the Declaration of Independence, the Constitution of the United States, and other data. The illustrations and maps are adequate.

GEORGE L. SCHERGER

ARMOUR INSTITUTE OF TECHNOLOGY

School Algebra. Part I. By W. E. PATERSON. Oxford: Clarendon Press, 1908. Pp. xxxix+328. $0.60.

This volume is labeled Part I, and is intended to be "a book on modern lines that is suitable for the beginner and can be continued in use for higher forms." It does not differ greatly from American school algebras which have been issued since the graph became popular. In language and arrangement it is well adapted to pupils in the early years of the secondary school. Many topics are illustrated by graphical treatment, and the form of curves corresponding to typical equations of the second and third degrees is considered at some length. Neither the binomial theorem nor progressions are treated and no complicated expressions involving the theory of exponents are given, but the final chapter is devoted to a simple treatment of logarithms. The examples are for the most part taken from recent examination papers of various institutions and the problems are with very few exceptions of the artificial type. The following specimen examination papers are appended: Oxford and Cambridge Schools Examination Board, July, 1906; Army Qualifying Examination, September, 1907; Oxford Local Examinations, 1907; Cambridge Local Examination, 1907; College of Preceptors, 1907; Central Welsh Board, July, 1906, and July, 1907.

WILLIAM E. STARK

ETHICAL CULTURE SCHOOL
NEW YORK CITY

A History of Education before the Middle Ages. By FRANK PIERPONT GRAVES. New York: Macmillan, 1909. Pp. 304. $1.10.

Professor Graves has produced a book which gives evidence on every page of his ripe scholarship, breadth of view, and keen discrimination between significant things and mere detail. He has shown himself to be a student of the history of the philosophy of education and an interpreter rather than a chronicler alone. Both types of historian are needed in the history of education as in other branches of history. But the chronicler must write mainly for the research student. The one who writes for the beginner must be an interpreter, just as every teacher of the elements of any subject must be essentially an interpreter. The one who essays these tasks assumes great responsibilities. There will doubtless be general agreement that Dr. Graves has shown himself to be an accurate and judicial interpreter..

Dr. Graves has viewed the history of education as a study of great movements in the progress of educational philosophy in relation to civilization rather than as a biographical study of educational heroes or a chronicle of the events of special periods or countries. This volume deals with "Non-Progressive Educa-

tion," and with "The Beginnings of Individualism in Education." The several chapters dealing with "Non-Progressive Education" are as follows: "Savages or Nature Peoples," "Barbarism or Early Civilization," "Egypt," "Babylonia and Assyria," "Phoenicia," "China," "India," "Persia," "Character of the Earliest Civilization." The second part has the following chapters: "Israel and Judea (the Jews," "Sparta and Athens (the Greeks)„' "Rome and the Roman World," and "Early Christianity."

This volume has afforded Dr. Graves abundant opportunity to turn to good account his classical scholarship in the field of which he had won his rank as a writer before entering the field of educational authorship. Every phase of the subject is well treated, but the part in which there is the most distinct addition over other histories of education is that dealing with "Non-Progressive Education." Others have also adequately covered the field of Greek and Roman education so that there was not suca a "long-felt want" for a proper treatment of those phases. This volume in connection with the succeeding one or two volumes will make a comprehensive treatment of the history of education. When Monroe's *History of Education* came from the press I was led to say that it was the first dignified textbook in the whole field of education. Most of the books have been made so small that they have contained mere summaries instead of the substance of the subject. The thin summaries have been of no use to the beginner, because so condensed and abstract, and equally valueless to the advanced student who had taken a full course of lectures with collateral readings. The latter could make his own summaries. Dr. Graves' book will furnish substance and will make a thoroughly dignified textbook.

FREDERICK E. BOLTON

UNIVERSITY OF IOWA

BOOKS RECEIVED

EDUCATION

cial Development and Education. By M. V. O'Shea. Boston: Houghton, Mifflin & Co., 1909. Pp. xiv+561. $2.00.

How to Study and Teaching How to Study. By F. M. McMurry. Boston: Houghton, Mifflin & Co., 1909. Pp. viii+324. $1.25.

"Riverside Educational Monographs." Edited by Henry Suzzallo. Boston: Houghton, Mifflin & Co., 1909. *Teaching Children to Study.* By Lida B. Earhart. Pp. xii+182. *Moral Principles in Education.* By John Dewey. Pp. x+61. *Ethical and Moral Instruction in Schools.* By George Herbert Palmer. Pp. ix+55. *Self-Cultivation in English.* By George Herbert Palmer. Pp. ix+43. *The Meaning of Infancy.* By John Fiske. Pp. x+45. $0.35 each.

The Three R's: Improvement in Them; Place in Present Course of Study. Cleveland Public Schools. By W. H. Elson. Cleveland: Board of Education, 1909. Pp. 30. With diagrams.

Proceedings of the Third Annual Congress of the Playground Association of America. Vol. III, No. 3. Report of the Committee on a Normal Course in Play. New York: Playground Association of America, 1909. Pp. 202. $0.15.

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"Crowell's Shorter French Texts." General editor, J E. MANSION. New York: Thomas Crowell & Co., 1909. *Choix de contes populaires de la Haute-Bretagne.* Par PAUL SÉBILLOT. Edited, with Introduction, Exercises, and Vocabulary, by E. K. SHELDON. Pp. 66. *Choix de poésies faciles.* Selected and Edited, with an Introduction and Vocabulary, by W. M. DANIELS. Pp. xiii+50. *Contes à ma sœur: La souris blanche et les petits souliers.* Par HÉGÉSIPPE MOREAU. Edited, with an Introduction, Notes, Exercises, and Vocabulary, by L. LAILAVOIX. Pp. 64. L'avare. By MOLIÈRE. Abridged and Edited, with an Introduction, Notes, and Exercises, by MARC CEPPI. Pp. 88. *L'avocat Patelin.* Par BRUEYS ET PALAPRAT. Abridged and Edited with an Introduction, Notes, and Exercises by MARC CEPPI. Pp. 55. *Le bourgeois gentilhomme.* By MOLIÈRE. Abridged and Edited, with Introduction, Notes, Grammatical and Retranslation Exercises, and Vocabulary, by MARC CEPPI. Pp. 58. *Le médecin malgré lui.* By MOULIÈRE. Abridged and Edited with Introduction, Notes, Grammatical and Retranslation Exercises, and Vocabulary, by MARC CEPPI.. Pp. 64. *Les jumeaux de l'hôtel Corneille.* By EDMOND ABOUT. Edited, with an Introduction, Notes, and Exercises, by S. TINDALL. Pp. 66. *Le trésor du vieux seigneur.* Par ERCKMANN-CHATRIAN. Edited, with an Introduction, Notes, Exercises, and

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IRENE WARREN
Librarian, School of Education, The University of Chicago

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[1] Abbreviations.—Atlan., Atlantic Monthly; Atlan. Educa. Journ., Atlantic Educational Journal; Dial, The Dial; Educa., Education; Educa. Bi-mo., Educational Bi-monthly; Educa. R., Educational Review; Educa. T., Educational Times; El. School T., Elementary School Teacher; Harp. W., Harper's Weekly; Journ. of Educa. (Bost.), Journal of Education, Boston; Journ. of Educa. (Lond.), Journal of Education, London; Journ. of Geog., Journal of Geography; Lib. Journ., Library Journal; Man. Train. Mag., Manual Training Magazine; Pop. Educa., Popular Educator; Pop. Sci. Mo., Popular Science Monthly; Pub. Lib., Public Libraries; School R., School Review.

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